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AN ABSTRACT OF

A Clinical Lecture

ON

THE APPLICATION OF SUTURING TO THE VASCULAR SYSTEM,

INCLUDING ONE CASE OF SUTURE OF A WOUND OF THE HEART AND TWO OF WOUNDS OF ARTERIES.

Delivered at the London Hospital

By RICHARD WARREN, M.D., M.Ch. Oxon., F.R.C.S. Eng.,

SENIOR SURGEON TO THE CHILDREN'S HOSPITAL, SHADWELL; ASSISTANT SURGEON TO THE LONDON HOSPITAL, E.

Gentlemen,—Within the last 20 years, especially in the last decade, the technique of suturing, so successful in the surgery of the abdominal viscera, has been serviceably employed in dealing with conditions of the vascular system, and it is to this branch of vascular surgery that attention is directed, exemplifying it with details of three cases which have come under treatment during the last few years.

There are three main difficulties to be encountered in the practice of suturing blood-vessels: (*a*) Hæmorrhage, which is overcome by very accurate suturing; (*b*) thrombosis, due to the effect of interposing foreign bodies (in the form of sutures) in the blood stream—this ill-effect is minimised by the use of suture material steeped in liquid vaseline; and (*c*) infection, which leads to thrombosis and disintegration of the tissues sutured, and spoils all hope of success, indicating the need for the most rigid asepsis in these operations.

Operations on the vascular system may be divided into intra- and extra-thoracic. In the former group we find attempts to suture wounds of the heart which have proved on the whole most successful. Attempts to remove emboli from the pulmonary artery, though successful experimentally (Trendelenburg), have not at present been brought to a successful issue in the human subject.

Wounds of the Heart.

These fall into two main groups according to the size of the wound in the thoracic wall and pericardium.

1. Where the wound in the latter is large and widely open and there is a penetrating wound of the heart of any size, death from uncontrollable hæmorrhage will be so speedy that opportunities for surgical interference can hardly arise, except in such exceptional cases as that described by Travers where the penetrating object remained in the wound and effectively plugged it.

2. A more usual condition is where the external wound is small and slit-like, as from a stab, and consequently the blood effused from the wounded heart cannot escape from the pericardium, but remains pent up in this cavity. Many such cases have been reported in America and the continent, but in this country they are rare. This collection of blood in the pericardium results in the heart being gradually compressed, and as the cavities of the heart are thus diminished in size, less and less blood is driven out with each beat till finally the amount is insufficient to support life. This weakening of the heart beat naturally diminishes the amount forced into the pericardium, so that such patients may live many hours after the injury; instances up to 24 hours are reported. The cases I have actually seen came under observation two to four hours after being stabbed. The clinical picture of this slow compression of the heart by effusion into the pericardium, which has been described as "heart tamponade," better "cardiac compression," is important to recognise since external bleeding may be minimal, nor does internal hæmorrhage often occur unless wounds of the pleura, lung, or abdominal viscera complicate the lesion.

The diagnosis of traumatic hæmo-pericardium and "cardiac compression" rests on (*a*) finding a wound over the præcordium, and (*b*) on the general symptoms of the patient, since local signs pointing to the condition, such as an increased area of cardiac dulness, diminished strength of the heart sounds, or adventitious sounds, may be quite unnoticeable.

(*a*) The wound will probably be quite small and with little or no external bleeding, and is likely to be tortuous and narrow, so that no amount of probing will show the depth to which it has penetrated.

(*b*) The general condition of the patient is peculiar and may be described as one of "irritable shock." The face is pale, drawn, and haggard, the mental attitude querulous and irritable, much complaint being made of pain over the præcordium. The pulse is small and rapid; respiration is but little affected. To conclude, where there is a wound over the heart of a patient who is suffering from severe constitutional depression the pericardium should be explored.

Exploration of the Pericardium.

Where the signs point to hæmo-pericardium only it will suffice to turn out a flap of soft tissues over the fourth and fifth right rib cartilages and the half sternum opposite these, removing the cartilages and half sternum. Where further injuries to lung, &c., are suspected it will perhaps be safer to employ positive-pressure insufflation anæsthesia and open the thorax widely along the fifth costal space, separating the ribs with suitable retractors. The fibrous scar resulting after the rib cartilages are removed is quite strong enough for practical purposes. Having exposed the pericardium the presence of blood is easily recognised by the tenseness of the sac, the impaired action of the heart, and the dark colour of the contained blood seen through the translucent wall. When in doubt a small incision through the wall of the pericardium will permit egress to the contained blood, and if the patient's condition is bad will relieve the pressure on the heart.

The next step is to open the pericardium freely and search for the wound in the heart; free bleeding may render this somewhat difficult. Having found the aperture it should be temporarily secured with catch-forceps and sutures passed taking up the whole thickness of the wall of the wounded portion. Ordinary silk sutures have proved successful, but to prevent thrombosis and pulmonary embolism vaselined sutures would be an improvement, since both cases coming under notice developed signs of embolism after some days. The pericardium should be closed without drainage, and the skin flap sutured in place, a drain tube passing down to the pericardium for 24 hours.

No. 4753.

CASE 1. *Stab wound of the right ventricle treated by suture.*—A male, aged 48, fat and flabby in build, had been stabbed over the heart four hours previously. A small linear wound ¾ inch long (which did not appear to be deep) was found over the præcordium, while external bleeding was minimal. The patient complained much of pain over the heart, was pale and anxious, with a small feeble pulse of 120; the area of cardiac dulness was perhaps slightly increased, and the heart sounds were feeble, but no adventitious sounds were heard. From the position of the wound and the amount of shock a diagnosis of hæmo-pericardium was made. The pericardium was explored by turning up a flap of soft parts and removing the cartilages of the fourth and fifth left ribs with half the sternum opposite these. The intercostal and internal mammary vessels were tied and the triangularis sterni displaced. The pericardium was tense, dark in colour, and the cardiac impulse obscured. The pericardium was freely opened, much blood escaping, and a wound 1¼ inches long in the anterior surface of the right ventricle was secured with catch forceps and sutured with five stitches of silk. The pericardium and skin were sutured as already described. The wound healed by first intention, and with the exception of slight left pneumothorax (due to tearing the pleura at the exploration) and a little femoral thrombosis, uneventfully. The patient was demanding work a year after, and three years later was alive and active.

SUTURING OF EXTRATHORACIC VESSELS.

Suturing operations on the extrathoracic vessels are confined to the larger sort, being impracticable and unnecessary in those smaller than the brachial, carotid, or femoral arteries. Blood-vessels may be sutured for (*a*) injuries, (*b*) in the treatment of aneurysms, and (*c*) to reverse the circulation in parts where the arterial circulation is becoming impaired.

Injuries of Blood-vessels.

In the case of injuries we may simply suture a cut in the wall of the vessel or perform an end-to-end anastomosis, or even by means of a double end-to-end anastomosis graft a portion of vein into a gap formed by the destruction of a considerable part of an artery.

The method of Carrel is the most practical for performing end-to-end anastomosis; the chief points in the technique are as follows:—1. Very fine silk sterilised in vaseline and the finest needles are employed. 2. The edges to be sutured are not bruised with forceps, but the needle is passed straight through. 3. Blood is prevented from escaping into the field of operation by placing rubber-faced clamps on the vessel above and below the site of anastomosis. 4. Blood and clots are washed out of the portions to be anastomosed with saline and the former touched with liquid vaseline. 5. The vessel is freed from its sheath for a sufficient distance (½ inch) and guide sutures are introduced (three in number) at equidistant points of the circumference of the ends to be united. These guide sutures are taken in pairs, tied, and gently pulled, thus rendering the part of the cut edges between straight, parallel, and everted. A continuous suture then closes the lines thus formed —i.e., the circumference is united by three continuous sutures, each taking up exactly one-third of the circumference, and thus bringing the edges together in an everted position, intima to intima. Having completed the entire line of suture the distal hæmostatic clamp is removed and blood enters from the lower end of the artery under low pressure. Some leakage takes place through the stitch holes, but this is checked by pressure with gauze for a minute. After removing the upper clamp the adventitial sheath is closed, and the overlying tissues are sutured in layers.

CASE 2. *Excision of an injured portion of the femoral artery, with end-to-end anastomosis.*—A youth, aged 17, was hit at 50 yards by the bullet from a small revolver which entered the apex of Scarpa's triangle; there was but slight bleeding and nothing pointing to arterial injury. The bullet was located with X rays and exploration made within 12 hours of the injury. On tracing the course of the bullet the latter was found to have penetrated the sartorius, and on enlarging the incision and retracting the latter muscle it was found that the femoral sheath had been pierced. The femoral artery was stained with lead on its outer surface and slightly dilated at the point of impact. The bullet was later run to earth in the adductor muscles, and together with portions of nether garments was removed.

On closer examination the artery was found to be thinned at the point of dilatation. This made it tolerably certain that the inner coats had been ruptured, or, in other words, that there was an early condition of traumatic aneurysm. Two courses seemed possible, either to tie the vessel above and below the site of injury, thus obliterating its lumen, or to remove the injured portion and perform end-to-end anastomosis. As the latter course seemed more conservative rubber-covered intestinal clamps were applied above and below the injured portion, incidentally tying a small collateral branch, and half an inch of the vessel was excised. On examining the excised part it was found to be split through the inner and middle coats for nearly the whole circumference of the artery, only the outer coat remaining intact. The cut ends were sutured by the technique described above, and although there was some narrowing at the site of suture the dorsalis pedis artery could be felt pulsating after the operation. The wound healed by first intention, and ten days later the pulse could be felt feebly in both the dorsalis pedis and posterior tibial artery. The return of power to the limb was quite good and the circulation satisfactory, though it is, of course, impossible to say whether the pulse was really due to transmission through the sutured portion or from increase of the collateral circulation.

Aneurysms.

The application of suturing to the treatment of aneurysms is largely due to the work of Matas, who has shown the great possibilities of his method. The main plans of treating aneurysms may be mentioned:—

(*a*) Excision of the aneurysmal sac and ligature of the arteries which feed it. Very rarely a small or early aneurysm may be excised and the artery reconstructed by end-to-end anastomosis as in the case just described.

(*b*) Obliteration of the sac (the most generally useful method), which may be accomplished:—1. By increasing the tendency of the blood to clot either generally, as by starvation and administering iodides, or locally by irritating the interior of the sac (Macewen), introducing foreign bodies with or without electrolysis (Moore, Conradi, Power), or diminishing the rapidity of the blood stream through the sac as by the various methods of ligature, proximal or distal, partial or complete. 2. By opening the sac, turning out clots, and tying or suturing all vessels leading into the sac. The underlying principle is equally in view both in the "old operation," where the sac was laid open without preliminary hæmostasis, the surgeon relying on his manual dexterity to find, control, and tie the "feeding" arteries of the sac before the patient bled to death, and in the operation of Matas.

The last method may fairly be called the "new operation," and is a natural advance on the older plan due to application of preliminary hæmostasis and asepsis. The blood-supply to the sac is controlled by tourniquet or temporary clamps on the main artery above and below the sac; the latter is opened, clots removed, and all the orifices leading into the sac securely sutured, the suture line being reinforced by invaginating the whole sac with sutures introduced from its interior till a solid mass is formed.

In general it may be taken as an axiom that where the wall of the vessel is diseased obliteration or excision of the sac is essential for cure, though palliation (often of long duration) may be attained by increasing the thickness of the sac wall by promoting clotting and fibrosis.

(*c*) By repairing the vessel, which is only feasible where the latter has given way at one point and is not generally diseased and dilated, or, in other words, in some instances of traumatic or false aneurysm, in which case the operation really is one of suturing a wound in the arterial wall. The following case is an example of the last method.

CASE 3. *Punctured wound of the brachial artery resulting in false aneurysm treated by suture.*—A lad aged 15 was stabbed with a knife on the inner side of the left arm; the skin was sutured and healed by first intention. During the next six weeks a swelling developed in the region of the stab, slowly increasing in size, and when the patient came for advice this extended the whole length of the inner side of the arm, as a tense, fluctuating, pulsatile swelling; the radial pulse below was imperceptible. In addition there was anæsthesia of part of the thumb and the first three fingers, together with weakness of the flexors of the wrist and fingers and of the short muscles of the thumb supplied by the median nerve, pointing to an extensive but incomplete lesion of that nerve.

At operation, after applying a tourniquet, the swelling was laid open and proved to be a thin-walled cyst filled with blood and clots, communicating with the brachial artery throught a slit about ½ inch long. The median nerve was flattened and thinned over this false aneurysm, but not divided. It had been hoped to close the wound in the artery and thus restore its lumen, but it chanced that the vessel had become impervious below the site of injury so that suturing the vessel (which was performed) simply cured the aneurysm, the vessel remaining impervious in its lower portion. The wound healed by first intention, and some months later there was no evidence of return of the aneurysmal swelling, while the lesion of the median nerve was gradually recovering.

(*d*) Reconstruction of an artery, affected by fusiform aneurysm, by suturing hardly demands mention, as our knowledge of the causation of this condition renders operative measures short of obliteration most unlikely to be successful, since the already diseased wall will surely give way again.

Arterio-venous Anastomosis.

Time and space will not permit of more than mere mention of the use of arterio-venous anastomosis and reversal of the circulation, with view of improving the blood-supply to parts threatened with incipient gangrene (usually the leg). Since successes (often qualified) are reported in some instances the method seems likely to have a limited use in carefully selected cases. The most suitable technique seems to be to perform a lateral anastomosis of artery and vein, together with ligature of the vein above the stoma, thus allowing of two routes by which the blood may reach the periphery.

The respectable amount of success attained in these cases by adopting the method of suturing renders the publication of the above series of special interest at this time, when amongst other wounds those involving the vascular system may, in large numbers, come under the care of surgeons.

ON THE VALUE OF ANTISTREPTOCOCCAL SERA.[*]

BY JAMES WALTER McLEOD, M.B., CH.B. GLASG.,
ASSISTANT LECTURER IN PATHOLOGY, CHARING CROSS HOSPITAL MEDICAL SCHOOL.

A STRAIN of streptococcus which I met in the course of my work was found to possess high virulence for rabbits combined with a very striking power of producing hæmolysis in these animals before death. It appeared to me to afford a good opportunity for testing the value of some of the commercial antistreptococcal sera, since there are few subjects in the whole range of bacteriology and therapeutics with regard to which a more confusing diversity of opinion exists than that of the value of serum treatment in streptococcal infections. Before going into this literature I shall record the results of my own experiments so as to be able to discuss them together with those of other investigators.

The strain of streptococcus in question had been originally isolated at a post-mortem examination from the spleen of a patient who had suffered from an obscure anæmia and was found at death to have vegetations on her mitral valve. After it had been subcultured on ordinary agar for two years it was passed through three rabbits in succession, and the strain from the third passage, which killed a rabbit in the dose of 0·005 c.c. but not in that of 0·001 c.c., was used in all the experiments without further subculture—that is to say, that all the cultures in fluid media used for injection of the rabbits were inoculated from an agar tube which had been smeared with the heart blood of the third passage rabbit and kept in the ice chest after a preliminary incubation of 18 hours. The medium used for the culture of the streptococcus consisted of 7 parts of ordinary bouillon and 3 parts of horse serum. The horse serum had been heated for 1 hour at 57° C., and then stored in sterile tubes for some weeks. The dose was in every case 0·5 c.c. of a culture which had been incubated for 12–13 hours—i.e., about 200 times the minimal lethal dose; it was administered subcutaneously. The serum used as a remedy was introduced directly into the general circulation through a vein in the ear, and in one or two instances this treatment was supplemented by a subcutaneous injection. The experimental animal was always the rabbit. A double control was made in each

TABLE I.

Experimental animal.	Treatment.	Result.
A.	8 c.c of antistreptococcal serum 15 min. before injection of culture.	Died within 40 hrs.*
B.	8 c.c. of antistreptococcal serum 4 hrs. after injection of culture.	,, after 49 hrs.
C.	Ibid.	,, ,, 52 hrs.
D.	8 c.c. of antistreptococcal serum 10 hrs. after injection of culture.	,, within 40 hrs.*
1st control.	8 c.c. of heated normal horse serum 4 hrs. after injection of culture.	,, after 75 hrs.
2nd control.	No treatment.	,, within 40 hrs.*

* As these animals died during the night the exact number of hours which elapsed before death occurred was not ascertained.

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[*] The expenses in connexion with this investigation have been mainly defrayed with the help of a grant from London University under the Dixon Fund. I have pleasure in acknowledging my indebtedness to the trustees of this fund.

experiment; one rabbit was treated with the heated normal horse serum used in preparation of the culture medium and a second received no treatment. The first experiment was carried out with the fresh serum, free from preservative, of one of the horses from which Messrs. Burroughs, Wellcome, and Co. obtain their polyvalent antistreptococcal serum.

A certain caution must be exercised in drawing conclusions from any experiments such as these on account of the varying individual resistance of the rabbits; the large dose of culture employed in these experiments, however, reduces this factor of variability considerably, and the conclusions to be drawn from the above experiments are probably accurate. They are, that both before and 10 hours after the injection of the culture little benefit is derived from the serum treatment in these conditions of experiment, but that four hours after injection of the culture treatment with serum has some effect in checking the infection and prolonging life. With this result in view a second experiment was undertaken in which specimens of antistreptococcal serum, in the form in which they appear in the market and are used clinically, were tried. Two of these were sera widely used in Britain and America—those of Messrs. Burroughs, Wellcome and Co. and Messrs. Parke, Davis and Co.—and the third was that of the Höchst Farbwerken prepared by Dr. Meyer and Dr. Ruppell, which has a high reputation in Germany. The results are recorded below:—

TABLE II.

Experimental animal.	Treatment.	Result.
A, 3 lb. 10 oz.	8 c.c. of B. W. and Co.'s ulcerative endocarditis serum 4 hrs. after injection of streptococcus.	Death within 40 hrs.
B, 3 lb. 14 oz.	8 c.c. of B. W. and Co.'s polyvalent antistreptococcal serum 4 hrs. and again 23 hrs. after injection of streptococcus.	,, ,, 40 hrs.
C, 3 lb. 10 oz.	8 c.c. of Höchst serum 4½ hrs. and 4 c.c. of the same 46 hrs. after injection of streptococcus.	,, ,, 4 days.
D, 3 lb. 6 oz.	7 c.c. of Höchst serum 4¾ hrs. and 8 c.c. of the same 23 hrs. after injection of streptococcus.	,, ,, 40 hrs.
E, 3 lb. 6 oz.	7½ c.c. of P. D. and Co.'s polyvalent antistreptococcal serum 4½ hrs. after injection of streptococcus.	,, after 26 hrs.
F, 4 lb. 6 oz.	7½ c.c. of the same 4 hrs. and 7 c.c. 23 hrs. after injection of streptococcus.	,, ,, 25 hrs.
1st control, 3 lb. 8 oz.	7½ c.c. heated normal horse serum 4¾ hrs. after injection of streptococcus.	,, ,, 70 hrs.
2nd control, 3 lb. 8 oz.	8 c.c. of the same 5 hrs., 24 hrs., and 46 hours after injection of streptococcus.	,, ,, 5 days.
3rd control, 4 lb.	No treatment.	,, within 40 hrs.

In this series of experiments only one of the commercial sera, that of Höchst, showed any protective action, but it was not a marked one. For this reason it was selected for a further experiment in which the effect of smaller doses, repeated more frequently, was tried. It was compared with the fresh serum of a horse which subsequently to prolonged treatment with a variety of strains of streptococcus was immunised against the homologous streptococcus. To this end it received injections of 10 c.c., 25 c.c., and 50 c.c. of cultures similar to those used to inject the rabbits in these experiments: they were given subcutaneously at intervals of 7 to 10 days, and the serum tested was collected a month after these special injections had been commenced.

TABLE III.

Experimental animal.	Treatment.	Result.
A, 3 lb. 4 oz.	Polyvalent and "homologous serum" B. W. and Co. 4 c.c. three hours after injection of streptococcus; 2 c.c. and 2 c.c. subcutaneously 25 hrs. after; 2 c.c. 35 hrs. after; 1 c.c. 48 hrs. after.	Death after 53 hrs.
B, 3 lb. 2 oz.	Of the same 8 c.c. 3½ hrs. after injection of streptococcus; 8 c.c. more and 1½ c.c. Höchst* serum 23 hrs. after; 8 c.c. again 34 hrs. after; 8 c.c. again 48 hrs. after; 4 c.c. again 54 hrs. after; 4 c.c. again 74 hrs. after.	,, within 4 days.
C, 3 lb. 10 oz.	4 c.c. of Höchst serum 3½ hrs. after injection of streptococcus; 4 c.c. of the same 25 hrs. after.	,, after 32 hrs.
D, 3 lb. 6 oz.	4 c.c. of the same 3¼ hrs. after injection of streptococcus; 2 c.c. after 24 hrs.; 2½ c.c. after 34 hrs.; 2 c.c. after 47 hrs.; 2½ c.c. after 55 hrs.	,, within 4 days.
1st control, 3 lb. 12 oz.	7 c.c. of heated normal horse serum after 3¾ hrs.; 7 c.c., 25 hrs.; 7 c.c., 35 hrs.; 6½ c.c., 47 hrs.; 4 c.c. subcutaneously, 55 hrs.; 4 c.c., 74 hrs.; 8 c.c., 96 hrs.	,, ,, 6 days.
2nd control.	No treatment.	,, after 26 hrs.

* This small quantity of Höchst serum was given by mistake in this experiment.

Here again it was found that the Höchst serum had a slight beneficial effect, as had also the serum from the horse previously injected with the "homologous" strain. The chief fact that seems to emerge from these experiments is that infections of the rabbit with this highly pathogenic strain of streptococcus are completely or to a large extent unaffected by the administration of some of the most reputed antistreptococcal sera.

In criticism it might have been urged that this was a rare strain of streptococcus different from any with which the horses yielding these sera had been inoculated; but it is not possible to maintain such a criticism, since the results with rabbits B and C in Table I. are not sensibly inferior to those with A and B in Table III., and the latter were treated with the serum of the same horse as the former after the horse had received repeated injections of the homologous streptococcus. Another explanation must be found, and this might be claimed in the very large dose of streptococcus with which the rabbits were injected. But neither is this a satisfactory explanation; for if the injection of streptococcus was a large one, so also were the doses of serum, corresponding as they did to 100 c.c.—500 c.c. for a human adult, and they were administered soon after the animal had been infected. Further, the infecting dose was certainly not so massive as to produce an absolutely intractable infection, for the life of the animal could always be considerably protracted by the help of normal horse serum. To me the most probable explanation seems to be that against this type of streptococcus no production of immune antibodies takes place. In support of this suggestion the three following experiments showing how difficult it was to immunise a rabbit against it may be quoted. It was found that 5 c.c. of a culture, in 20 per cent. horse serum bouillon, of the original strain (P.M. 8488) killed a rabbit, but that a 1 c.c. dose did not.

Rabbit A, 7 lb. 4 oz. An emulsion in normal salt solution of an old agar sloped culture which had completely dried up was injected on April 4th. As the animal seemed to be quite unaffected a second injection consisting of a similar emulsion of two dried-up cultures, one of them from a passage strain of this streptococcus, was administered subcutaneously on the 9th. The rabbit died within 24 hours; its blood was completely laked and had in film the appearance of an abundant culture of streptococcus in a fluid medium.

Rabbit B, 5 lb. 10 oz. June 11th: 2 c.c. of a culture of the original strain in 70 per cent. rabbits' serum bouillon; the rabbit remained well. June 23rd: 6 c.c. of a culture of the original strain in 30 per cent. horse serum bouillon. June 26th: Died with post-mortem appearances similar to A.†

Rabbit C, 5 lb. 2 oz. June 11th: 3¾ c.c. of a culture of the original strain in 70 per cent. rabbits' serum bouillon; the rabbit remained well. June 22nd: 3 c.c. of a culture of the original strain in 30 per cent. horse serum bouillon. June 24th: Died with post-mortem appearances similar to A.†

In looking for corroboration or explanation of these results in the literature with regard to streptococci it is best to examine only those papers which deal with the different methods of preparing antistreptococcal sera, the results obtained from their use in animal experiment, and the study of the factors underlying immunity to streptococci. Those papers which discuss the results obtained clinically with antistreptococcal sera have no certain bearing on this question since no criterion of the virulence of streptococci pathogenic for man has yet gained general acceptance. The death of a patient from whose blood a streptococcus has been isolated does not necessarily indicate a special degree of virulence in that streptococcus. This question has been more fully discussed in another paper (McLeod[1]).

When the serum therapy of streptococcus infections was first launched those who promoted it fell into two camps. On the one hand there were the authors like Marmorek[2,3] and Aronson,[4] who, assuming the unity of pathogenic streptococci, considered that all that was necessary in order to obtain a good serum was to raise any given strain of streptococcus to so high a degree of virulence, by repeated passages through laboratory animals, that it should be capable of producing a marked reaction in the horse and therefore a copious production of antibodies. They claimed that such sera were active against different varieties of streptococci, and that they had the virtue of lending themselves to tests of efficiency on laboratory animals. On the other hand, Moser,[5] Menzer,[6] and Tavel,[7] depending partly on an observation of the last named that large doses of Marmorek's hyper-virulent cultures could be injected to a cancerous area in a woman's womb without any effect, said that all this testing on laboratory animals was past the point, that reliable sera could only be obtained by injecting horses with as many different strains from man as was possible, and that, since most of these strains were slightly pathogenic to animals and the sera could not therefore be tested by the method of animal experiment, the proof of the efficacy of a serum must depend on the collection of numerous data as to its clinical value. Later Aronson[8] modified his attitude so far as to inoculate his horses with numerous human strains as well as with his passage strains, since he had observed that an animal might still react to the former when fully immunised to the latter.

The next innovation in serum production came from Meyer and Ruppell.[9] These authors tried to combine the advantages of both methods described above. By a special method of cultivation they were able to obtain human cultures virulent for laboratory animals and to maintain the virulence of these strains so as to be able to test the value in animal experiments of their antisera. They found it necessary, however, to immunise their horses first with animal passage strains in order to enable them to support their special cultures from man. As Aronson[10] points out, this is tantamount to an admission that you can immunise against human cultures with passage strains.

Aronson,[11] however, claims that his monovalent serum obtained with a passage strain is superior to Meyer and Ruppell's serum even against streptococci isolated direct from man. Marxer,[12] on the other hand, found that a monovalent serum obtained directly with a human strain pathogenic to animals was effective equally in animal experiment against passage strains, human strains, and strains obtained from horses with glanders. Another point of view is that of Weil,[13] who claims that the antisera of Aronson and others contain only immune body, which is directed against a special type of streptococcus, the passage type, and that they have no effect on most streptococci isolated from man. To prove this he submits experiments in which the bacteriotropine of these sera for passage strains is removed by contact with emulsions of streptococci from cultures of such strains, but not by similar emulsions of strains which have not undergone passage.

Heimann[14] expresses a somewhat similar opinion. He says that Aronson's serum protects from Meyer and Ruppell's passage strain of streptococcus and vice versâ, but that neither protects from strains isolated directly from man. Sommerfeld[15] confirms Aronson's result that the A serum is active against various strains of streptococci, but he subjects all these strains to repeated passage before testing them. This invalidates his conclusion.

Simon[16] ranges himself with Weil and Heimann. He obtained monovalent immune sera by injecting rabbits, and found that sera obtained with highly virulent passage strains protected only against those strains, but not against direct human strains; further, he found that it was very difficult to get efficient immune sera by injection of human strains. The most interesting of his statements is that it is possible to raise the virulence of a streptococcus by passage without changing its individuality, and that after several passages the streptococcus when used for immunising a rabbit will produce relatively powerful protective sera against the direct human strain from which it was derived. He also claims to demonstrate a point at which the human strain becomes converted to a passage strain, but in view of the varying effect of the strain employed on the control animals it is doubtful whether his experimental proof of this point is adequate.

Lastly, one more aspect of this subject is broached by Zangemeister.[17,18] This author, while admitting the efficacy of Aronson's serum in combating infections of mice with various streptococci, considers that there is no proof in this of its value in human disease, and in support of this opinion he quotes experiments in which the serum failed to protect monkeys, and other experiments in which he failed to produce any beneficial effect by administering prophylactic doses of Aronson's serum to patients for whom he feared a peritoneal infection subsequently to the removal of an infected carcinoma of the uterus. He recommends for this reason the serum of the monkey or of men convalescent from streptococcal infections. In reply Aronson[19] quotes experiments to show that the antistreptococcal sera obtained by injection of a large variety of animals, including monkeys, were all about equally useful in protecting monkeys with the exception of two monkey sera which did not protect mice. He further states that Zangemeister's prophylactic experiment on man is not a reasonable one, since the effect of antistreptococcal serum depends on the coöperation of the leucocytes which could not be obtained in a cancerous subject with deranged leucocytic activity. This is scarcely a convincing argument, since a deranged leucocytic activity in this sense in cancer is only an assumption, and people who are infected with streptococci are perhaps more liable to have their leucocytic systems deranged by the toxæmia from which they suffer.

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† This strain of streptococcus appeared to grow better in the second medium used in these experiments than in the first.

The data obtained by various authors with regard to the efficiency of antistreptococcal sera are given in Table IV.

hæmolytic toxin of the streptococcus, streptolysin, is formed in animals injected with it, and McLeod and McNee[35] have shown that the hæmolytic toxin and general toxin of the streptococcus are closely allied and possibly identical.

There are, however, three types of antibody which have been shown to exist in these sera. Two of these are unimportant. An amboceptor capable of absorbing complement was demonstrated by Besredka[21] in his own antistreptococcal serum; he could not find it in that of Aronson, but he admitted that there was no definite relationship between its amount and the protective power of a serum. Agglutinins for streptococci have been obtained by a number of authors, notably Neufeld[36] and Kerner,[37] and have been used for aiding classification. Little is known as to their significance in streptococcal immunity. The third antibody, to which by general consent the chief rôle in the protective action of antistreptococcal serum is ascribed, is an immune opsonin or bacteriotropin. This immune body was first fully described by Neufeld and Rimpau,[38] who suggested that its function was to neutralise those amboceptors to which the virulence of a streptococcus was due; it was, they considered, owing to the absence of such amboceptors in avirulent strains that these were useless for obtaining actively bacteriotropic sera.

TABLE IV.

Author.	Sera tested.	Prophylactic value.	Curative value.
A. Marmorek.[2]	Serum of horse treated with hypervirulent passage cultures.	0·2 c.c. protected against 10 m.l.d. (rabbit).	1 c.c. protected 3 hrs. and 5 c.c. 5 hrs. after an injection of 10 m.l.d., but not later, except in the case of moderately virulent streptococci (rabbit).
F. Meyer.[20]	No details.	Large doses had occasional preventive action, but not against virulent strains.	—
H. Aronson.[4]	Serum of horse treated with hypervirulent passage strains.	0·0005 c.c. protected against 10 m.l.d. (mice). Rabbits required more proportionally to their weight, 0·5 c.c.–1·0 c.c.	0·05 c.c. protected from 3 till 24 hrs. after injection of 10 m.l.d. (mice). 5–10 c.c. usually cured rabbits 6 hrs. after infection.
Besredka.[21]	Serum of horse treated with intravenous injections of emulsions of serum agar cultures.	—	0·001 c.c. of serum protected against 10 m.l.d. 18–24 hrs. after infection. 1·5 c.c.–2 c.c. serum protected against more than 100 m.l.d. 2 hrs. after infection (rabbit).
Ruppell.[22]	Serum of horse treated with hypervirulent passage cultures.	0·0002 c.c. protected against 10 m.l.d. (mouse). 1·0 c.c. protected against 10 m.l.d. (rabbit).	1 c.c. of serum protected against 2 m.l.d. (rabbit) 6 hrs. after infection. Ruppell and Meyer[9] admit that they meet strains from time to time against which their serum is ineffective.
Weaver and Tunnicliffe.[23]	Parke, Davis and Co.; Aronson; Institut Pasteur.	Protection only obtained when injection proceeded that of culture by 4 hrs.	Protection was only obtained with difficulty and when the serum was administered within a few hours of the injection of a small dose of culture (guinea-pig).
Chiarolanza.[24]	Aronson; Tavel.	—	Where cultures were injected to the rabbit's peritoneum these sera never protected against virulent strains of streptococci, but frequently against ones of lesser virulence.
Von Lingelsheim.[25]	Schering; Höchst.	—	0·25 c.c. of serum protected against 100 m.l.d. up to 6–8 hrs., but not against greater amounts or after a longer time (mice).

Factors Underlying Immunity to Streptococci.

It is generally accepted, at the present day, that in the sera of animals immunised with cultures of streptococci, filtrates of these cultures, or with streptococcal aggressins certain antibodies do not occur. Thus Ruediger,[26] Lomonaco,[27] Weil,[28] and Reichstein[29] have demonstrated the absence of bactericidal action in antistreptococcal serum and in the blood of infected animals, since, as a matter of fact, virulent streptococci often grow well in either. Weil[30] showed that the injection to guinea-pigs and mice of filtered peritoneal exudates of animals which had been subjected to a streptococcal infection did not lead to the production of any immunity. Besredka,[31] Tchitchikine,[32] McLeod,[33] and Braun[34] have shown that no antitoxin to the

With regard to one point at least in this connexion there is marked unanimity amongst the various authors—namely, that cultures of streptococci killed by heat are of no value for immunising. Neufeld[36] alone claims for them some activity, since he always starts immunising with large quantities of culture killed by heat before proceeding to inject living cultures. Bacteriotropin does not appear to be formed in any sensible amount except when the living bacteria are engaged in a struggle to maintain their footing in the animal body, so much so that Schenk[39] found that the more ill an animal was at the moment of drawing blood the greater the protective power of its serum was likely to be. Weaver and Tunnicliffe[40] show that the opsonic power of the serum of an animal injected with streptococci killed by suspension in 25 per cent. galactose was raised, and that simultaneously its resistance to infection was increased, whereas neither the one nor the other was changed by injection of streptococci killed by heat. Weil[30] states that immunity is only conferred on mice and guinea-pigs by the presence of live streptococci in their body.

Discussion.

Although so many of the experiments performed with a view to elucidating this subject appear to have yielded contradictory results there is yet a general trend of evidence which can afford considerable help in determining the practical value of antistreptococcal sera. The value of this remedy for streptococcal infections in mice with homologous streptococci has been proved beyond all question, but the efficiency of these sera for the rabbit is a long way behind that for the mouse apart altogether from the difference in weight of the two animals, and if the dose necessary for man should only increase in the ratio of his weight to that of the rabbit, the prospect of successful treatment would depend on the immediate administration and frequent repetition of huge doses, costing from £2 to £6, and even this calculation is based on the assumption that the serum employed will react specifically with the strain of streptococcus in question. How far is this assumption justified?

The value of any serum administered to a patient must depend, apparently, on the amount of immune opsonin conveyed to him for the strain with which he is infected, but there are several reasons for doubting whether the amount of this body conveyed even in large doses of antistreptococcal serum is ever sufficient seriously to influence the course of a streptococcal infection. In the first place, there is some evidence indicating that up to a certain point there is a specific opsonin for each strain of streptococcus. Thus Meakins[41] found on examining the sera of patients suffering from various streptococcal infections that their opsonic action was always decidedly raised for the streptococcus with which they were infected, but very little or not at all for other streptococci, whether these were isolated from similar morbid processes or not. But even if we do not adopt this extreme attitude we find so many authors agreeing that the sera obtained with hypervirulent passage strains protect only against such strains and not against strains of direct human origin (Meyer and Ruppell,[9] Simon,[16] Heimann,[14] Weil[13]), that we cannot reasonably expect satisfactory results from such sera in human therapeutics. Then, on the other hand, a number of authors (Aronson,[4] Simon[16]) point out that the animals from which sera are obtained react very slightly to streptococci derived from human sources and therefore yield little antibody. Even Meyer and Rupell,[9] who by a special method of culture obtained direct human strains which were highly pathogenic to animals, and who treated their horses with a large variety of these as well as with passage strains, admit that they occasionally meet fresh strains from which they cannot protect laboratory animals with their serum.

Heynemann and Barth[42] could not find any abundance of opsonins or any other protective antibodies in various antistreptococcal sera which they examined by means of test-tube experiments, nor were their results in treating puerperal septicæmia with 100 c.c. doses at all reassuring. In fact, the only theoretical ground in this connexion which appears to exist for persisting in the serum therapy of streptococcal infections is contained in the work of Simon,[16] who shows that animal passage increases the virulence and immunising power of strains isolated from man without immediately changing their characteristics to those of the typical passage strains. According to this conception, what is required for successful serum therapy is that the serum used should have been prepared with a strain of streptococci closely allied to that causing the infection and having undergone a sufficient number of passages to raise its virulence without changing its other characteristics. Suppose, however, that it is granted that there is available for any given streptococcal infection an animal serum containing abundant opsonin, it does not follow that the administration of any ordinary doses of such serum will be effective. If we divide streptococcal infections into three groups, (*a*) slight, (*b*) severe, and (*c*) very severe, we find that in group (*a*) recovery is spontaneous. In (*b*), in which there is a severe infection with recovery in a considerable percentage of cases, the very best conditions for stimulation of opsonin formation in the patient's own body are present, since Schenk[39] has shown that in streptococcal infections of the rabbit the protective power of the serum is greatest during the period when the animal is most ill. It is therefore very doubtful whether the addition of a relatively small amount of extraneous opsonin in the form of antistreptococcal serum would be of much help. Of course, in the case of a patient who did not form any opsonin in response to the stimulus of streptococcal infection the position would be different, but apart from cases of severe toxæmia it remains to be proved that such patients exist. In (*c*), the very severe infection, the patient is suffering from a severe toxæmia which is causing a partial or complete paralysis of his leucocytic system; it is not, therefore, opsonin which he requires but antitoxin, and by general consent the various antistreptococcal sera do not contain any antitoxin. Further, my own work, recorded above, shows that there appears to be no development of immunity against strains of streptococci which are very virulent for the rabbit and which produce a marked toxæmia in the bodies of the infected rabbits. In this connexion it is interesting to note the results of Strouse,[43] who never succeeded in obtaining immune opsonins for highly virulent pneumococci in the sera of animals which had been injected with them, nor yet in the sera (post critical) of the patients from whose sputum or blood they had been recovered. He quotes Boettcher in support of this result. Before leaving this subject it should be pointed out that even in the group (*b*) the rôle of streptococcal toxin may be considerable, since a number of experiments on the rabbit have shown that the animals sometimes die 10–20 days after an injection of streptococci, although their blood does not appear (culture) to contain any streptococci at the time of their death. Weil[13] attributes these deaths to the remote effects of streptococcal toxin.

The conclusions which I feel inclined to draw from the literature of this subject and from my own work upon it are the following:—

1. That a certain type of streptococcus exists,

very virulent for rabbits and capable to a peculiar degree of producing toxin in the body of an infected animal, against which rabbits cannot be readily immunised, and that the serum of a horse treated with injections of these streptococci is not capable even in large doses of conferring passive immunity on the rabbit.

2. That a careful perusal of the literature with regard to antistreptococcal sera leads to the opinion that none of the sera available is likely to afford a supply of immune opsonin at once adequate in amount and sufficiently adapted to the strain of streptococcus involved markedly to alter the course of streptococcal infection in man.

3. That in the treatment of severe streptococcal infections normal heated horse serum, which has been proved slightly superior in the experiments recorded in this paper, and which would in any case be cheaper and more easily preserved, might, if administered in large doses, be substituted with advantage for commercial antistreptococcal serum.

4. That experimental work on the therapy of streptococcal infections which aims at finding some artificial antibody to streptococcal toxin is much more likely to be fruitful than any further efforts to amend and improve the methods of immunising horses to this type of bacteria.

I desire to express my hearty thanks to Dr. William Hunter, in whose laboratory this work was carried on; and also to Messrs. Meister, Lucius, and Brüning, Höchst Farbwerken, Messrs. Burroughs, Wellcome, and Co., and Messrs. Parke, Davis, and Co. for specimens of antistreptococcal serum with which they have kindly supplied me. I am specially grateful to Dr. H. H. Dale, of the Wellcome Physiological Research Laboratory, and to some members of his staff for the opportunity which they afforded me in carrying out one part of this investigation.

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Charing Cross Hospital Medical School.

THE OPERATION OF SCLERO-CORNEAL TREPHINING,

CONSIDERED IN RELATION TO THE PRINCIPLES WHICH SHOULD GUIDE AN OPERATOR IN THE PERFORMANCE OF A SCLERECTOMY.[1]

BY R. H. ELLIOT, M.D. LOND., F.R.C.S. ENG.,
LIEUTENANT-COLONEL, INDIAN MEDICAL SERVICE.

THE essential feature of all forms of sclerectomy is the removal of a portion of the outer tunic of the eye, and the establishment thereby of continuous drainage from the interior of the globe into the subconjunctival space. An effort has been made by some ophthalmologists to draw a distinction between the fistulous scars so obtained and the "true filtering scars" which they claim are produced by methods in which the removal of a piece of the investing tunic is avoided. It is obvious that if it could be shown that a spongy fistula-free scar is a possibility, it would be correct to draw a sharp distinction between such wounds and those which include one or more fistulæ in their area. Unfortunately, however, no such evidence exists, and on the contrary all that we know of scar tissue is opposed to the view that it will under any circumstances remain loose, open, and permeable to fluid. It may be that a wound may include not one large fistula, but a number of tiny ones instead; this, however, is quite a different thing from what has ordinarily been understood by those who apply a limited significance to the term "filtering scar." In the meantime the majority of ophthalmologists have apparently decided, a little loosely perhaps, to consider the terms "filtering" and "fistulous" as synonymous. It is proposed in this paper to conform to this usage, and the more readily so since the writer believes that in the treatment of glaucoma *we fail in our purpose if we fail to establish fistulisation.*

This statement leads one to turn aside for a moment to consider the results which have been obtained by iridectomy in the treatment of glaucoma. It has often been urged that iridectomy alone will cure cases of glaucoma, and that in such eyes the smooth appearance of the conjunctiva negatives the idea that subconjunctival filtration is taking place. Such a view is fallacious; it is quite easy in a very large proportion of these cases to demonstrate well-marked subconjunctival œdema by gentle local pressure with a spud. It is probable that the operation of iridectomy is only of value when it leads either to the establishment of a permanent filtration, or at least of one which persists long enough to allow of the re-establishment of normal conditions within the eye. The argument that the uniform grey appearance of such scars shows that they represent filtering as distinguished from fistulous conditions cannot be seriously entertained in the absence of confirmatory anatomical evidence. It is doubtful if such will ever be forthcoming.

We are thus led to the key of the whole position, which is contained in the statement that in the operative treatment of glaucoma we must aim at the establishment of a permanent subconjunctival fistulisation of the eye. Within this broad assertion many minor considerations are included—e.g., that every possible means must be taken to assure the safety of the eye both at the time of operation and subsequently, and that the degree of fistulisation produced must bear some definite relationship to the needs of the particular case. It is proposed to consider these matters now in connexion with the technique of sclero-corneal trephining.

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[1] This paper was written by request to be read at the International Congress of Ophthalmology at St. Petersburg, August, 1914. Owing to the outbreak of the war the Congress was not held, and is postponed *sine die.*

The Operative Conditions Necessary to Establish Permanent Filtration.

These are (1) asepsis of the wound; (2) the formation of a suitable channel of sufficient size in the investing tunic of the eye, the size being capable of graduation according to the needs of the case; and (3) avoidance of the entanglement of uveal tissue in the wound, either at the time of operation or later.

(1) *Asepsis.*—It is a primary condition of success that the fistulous channel should from the first be kept aseptic and bathed in the isotonic, unirritating aqueous fluid. The most scrupulous antiseptic and aseptic technique is therefore called for, and the use of large flaps is an obvious indication. Any failure in our asepsis will promote the formation of proliferative tissue in the trephine hole, and thereby predispose to blockage. The proliferative tissue may arise from the surface or from the depth of the wound, and possibly also from the sides of the tunnel. One sees cases in which it seems likely that the source of the sepsis may be present in the eye before operation, and in which the prognosis will therefore be a poor one, whatever care we may take.

(2) *The channel.*—Experience has shown how necessary it is that we should be able to cut a channel of the size we require, making it larger or smaller according to the needs of the case. An eye suffering from a chronic non-congestive glaucoma will be relieved by a very small aperture, especially if the rise of tension is not an excessive one, whilst another, which has long been subject to attacks of a congestive type, will demand a free aperture if the drainage is to be permanently maintained.

A 2 mm. trephine should, I think, always be used, and the amount of disc cut off should be regulated according to the needs of the case. In every case the corneal edge of the trephine should be made to cut its way through first, so as to leave the hinge of the disc on the scleral side. If it is desired to remove the whole disc the tilting of the instrument should be slight, and just sufficient to ensure the leaving of a tiny strand of uncut scleral tissue; if, on the other hand, we desire to remove a half or less of the disc, it is advisable still farther to incline the instrument so that a larger hinge may be left; this is merely a question of the angle that the trephine edge makes with the tunic of the eye, and depends on the tilt that we give the upper end of the instrument towards the patient's feet. The disc is pushed up into the wound by the pressure of the iris behind it, and it can be easily seized with iris forceps and as much of it cut off as we wish. In so doing the cut with the scissors should be at right angles to the plane of the portion excised, so as to avoid the making of a slanting wound; the latter is to be avoided, since the sectional area of the channel made should obviously be kept the same right throughout, in order to gain a maximum of effect with a minimum of weakening of the supporting coat of the globe. The objection to what would appear to be the more obvious plan of reducing the size of the trephine blade is that it is not possible to work with iris forceps and scissors in any aperture of less size than one of 2 mm. We are therefore well advised to make our aperture large enough in the first instance, in order that we may be in a position to deal with iris trouble should it arise.

It is most desirable to operate in such a way as to *ensure the production of fistulisation*, and it is submitted that this end is probably best served by making a clean-cut channel at right angles to the surfaces of the tunic. Any attempt at tunnelling through the sclera, such as is involved in the making of slanting incisions, will militate against the certainty with which permanent fistulisation can be secured. It is most necessary to emphasise the fact that the greatest difficulty in operating for glaucoma by means of any form of sclerectomy is the permanent maintenance of the filtering channel. Beside this, and in comparison with it, all other difficulties fade into insignificance. I feel sure that this will be the verdict of all surgeons with large operative experience. It is not disputed that there are many other difficulties and dangers which we have to meet, and they must be taken seriously into account, but it is of vital interest that we should not lose our sense of proportion, or our results will suffer thereby.

(3) *The avoidance of the entanglement of uveal tissue in the wound.*—The investigation of globes, which have been removed after the failure of trephine operations, has confirmed the correctness of the view, long ago put forward from Madras, that the impaction of uveal tissue in the trephine hole constitutes a grave complication of any case in which it occurs. In the first place it tends to block the hole mechanically, and in the second it is liable to lead to a later obstruction, owing to the proliferation of inflammatory connective tissue. On the other hand, experience has most conclusively shown that, since we have adopted the more anterior position for our trephining, we have very materially lessened those dangers of the procedure which were incidental to complications resulting from the impaction of uveal tissue in the wound.

It is first necessary to look at the question from the anatomical standpoint. Rochon-Duvigneaud has shown that the measurement of the interval between the angle of the anterior chamber, on the one hand, and the transparent edge of the cornea on the other, is 2·25 mm. in the vertical meridian above the cornea. To this space, available for the implantation of the trephine, we can add at least 1 mm. by splitting the cornea. On the other hand, we have to remember that adhesions between the iris base and the periphery of the cornea, and the dragging forward of the ciliary body, both of which are met with in long-standing cases, may seriously lessen the area at our disposal. There is a farther point, which is of considerable importance: if the trephine hole is placed far back its internal opening lies on practically the same plane as that of the iris, whilst the more anteriorly the trephining is made the greater is the antero-posterior distance separating the two structures. Now, when a chamber refills after operation, the natural tendency of the iris is to fall back into its own plane, and thus to be carried as far as possible from any opening in the corneo-sclera, always provided that this opening lies on a plane anterior to that of the iris, and that the latter membrane is not itself pushed forwards by structures lying behind it—e.g., the lens or vitreous body. These anatomical arrangements show that, apart from any pathological considerations arising out of the presence of uveal adhesions, there is a distinct element of safety in making the trephine hole far forward. The position may be thus summed up: *It is essential to place the trephine hole as far from the angle of the chamber as possible, in order to avoid the impaction of uveal tissue in its channel.*

The technique I have advocated makes this condition easy of fulfilment. The trephined disc, hinged on its scleral side, can be dealt with according to the exigencies of the individual situation. Whether we remove nearly the whole of it, or less than a third of it, the fistula formed lies on the corneal side of the wound, and all the tissue left remains interposed between the angle of the chamber and the inner opening of the fistula, thus removing the latter as far as possible from the neighbourhood from which danger may be feared.

Whilst separating the disc we should at the same time deal with the iris. It is an easy matter to include both iris and disc in one grip of the forceps, and to divide both together with a single snip of the scissors, thus performing the iridectomy with the same cut that severs the hinge. The great advantage of this is that our grip of the disc steadies the eye, and effectively prevents even a troublesome patient from rotating it until after the portion of iris has been removed. We are thus enabled to avoid all risk of the uveal tissue being dragged into, and becoming impacted in, the trephine hole. It cannot be too strongly insisted on that all drag on the iris should be avoided during the manipulations in the course of this operation.

The Protection of the Fistulous Track after Operation.

This is best accomplished on the operation table by the adoption of a correct technique in dealing with the flap. The assertion has recently been made by critics of the operation of trephining that the filtering scar produced by this method is of the vesicular type, and that the area of filtration is limited to that immediately surrounding the wound. If one starts from such a basis it is not difficult to show that trephining is a very faulty method. Fortunately, however, it is within the power of anyone who will adopt a correct technique to prove for himself that the above assumptions are incorrect, that the prominent vesicular scar is a product of faulty workmanship, and that a well-performed operation leads to the establishment of an area of filtration as extensive as that of the subconjunctival space itself. What, then, are the points to attend to in order to avoid the defects we have been discussing? The answer lies in the preparation of the covering conjunctival flap. The flap must be (1) correct in form, (2) large in size, and (3) correct in the method of its preparation.

(1) *The form of the flap.*—I have for years insisted on the necessity of making the conjunctival incision run concentric with the limbus and at some distance from the latter throughout its extent. The object of this, as is well known, is to render the whole of the subconjunctival space available for filtration. If one examines a correctly trephined eye months or years after the operation one finds that the pitting of the conjunctiva, obtained by probe pressure, is best marked near the trephine hole, less so at each side, and perhaps indetectable below the cornea. If, however, the globe is now well massaged, or if the filtration is exceptionally free to start with, the pitting can be obtained without difficulty, even in the quadrant farthest away from the hole.

(2) *The size of the flap.*—It is probably unnecessary to insist any further on the need for making the flap large, since this is now so widely recognised by surgeons everywhere. Large flaps do not produce astigmatism, and they are a safeguard against wound infection and a factor favourable to the widespread diffusion of the filtering fluid. Large flaps also tend to lie well in place and so help us to avoid the necessity for the use of sutures; it must be obvious that the avoidance of sutures makes the procedure shorter and safer.

(3) *The correct dissection of the flap.*—It is unnecessary and therefore unsurgical, to dissect up the whole area included in the flap; moreover, by so doing we rob the flap of the check-ligament-like action of the connective tissue at the angles of the wound. If we leave the tissue intact the detached conjunctiva tends to spring back into place the moment it is released from the downward pull, whilst if we dissect up the margins of our wound we find that at the close of the operation the flap falls limp and inert over the eye like a loose apron. We should for this reason carry our dissection down to the limbus over the central area of the wound alone. This does not prevent us from exposing the area we require for trephining, whilst it helps very materially to make the finished flap lie in good position. In the upper part of the dissection it is not necessary to take up anything but loose conjunctiva, but as the limbus is approached we should work down to the sclera, and lay the latter *bare* in the last few millimetres of the wound. At the same time the breadth of the area dissected should contract as the cornea is approached, so that when the latter is reached we only expose just such a breadth of it as we mean to split, and very little more. The limbus must next be clearly defined, and the adjacent sclera carefully cleared of any tags of connective tissue. Lastly, the cornea is to be split. The examination by Mr. Sydney Stephenson of eyes in which trephining had failed, showed clearly that the cornea had really been split, and that the flap made included, not merely the anterior epithelium and Bowman's membrane, but also some of the superficial layers of the cornea, which could be traced for a long distance in the sections and which could be seen to be separated from the deeper layers. Recently Captain C. H. Reinhold, I.M.S., has sent home from India some eyes in which he split the cornea in the post-mortem room; these have kindly been examined by Mr. J. Fison, and have conclusively confirmed the deductions drawn by Mr. Stephenson from his more difficult material.

If the technique I have advocated is closely followed the surgeon will obtain thick-based flaps which will have small tendency to form vesicular scars, but which, on the contrary, will provide a wide and even area of filtration. Nor is there any reason to fear that the corneal portion of the flap will fail to allow of filtration or that it will tend to be vesicular in type. If such things do happen it is because the technique of our operation has been faulty.

Post-operative Iritis.

At least three different conditions appear to have been dealt with, and I think confused, by some recent writers when discussing post-operative iritis—viz., (1) the commonly occurring post-operative complication, usually called "quiet iritis," which is familiar to every surgeon who trephines; (2) an exacerbation of, or may be merely a continuance of, an acute or subacute condition which existed prior to the operation; and (3) a true septic condition of the wound, due to an accidental contamination at or after operation. It is important to keep these three classes of cases absolutely distinct in one's notes and in one's mind.

1. *The quiet iritis.*—The act of trephining alters the relationships of the parts which border on or project into the anterior chamber. This chamber is, for a time at least, practically empty, with the consequence that the iris lies in direct contact with the lens capsule, the posterior chamber being temporarily reduced to a potential cavity; at the same moment the long-continued mydriasis has given place to a state of more or less marked myosis; it follows, therefore, that we have to hand the very conditions which render the formation of posterior synechiæ most easy. Again, the fluid secreted after the operation is probably of such a nature as to render the deposition of fibrin from it more liable to occur, and this without premising an access of inflammatory action. It has been assumed that this form of iritis is characteristic of trephine operations. I am confident that it is far from uncommon after other procedures designed for the relief of tension, inclusive of simple iridectomy. The practical lesson to be learnt is that atropine should be freely exhibited from the second or third day after operation onward until all tendency to the formation of synechiæ has ceased. If this be done "quiet iritis" can be reduced to the rank of an inconvenience; otherwise it is a serious danger.

2. *A continuation of, or an exacerbation of, an acute or subacute condition which existed prior to the operation.*—A careful survey of such cases suggests the idea that we have to do with a septic action which was in existence before the operation, and which is, for the present at least, beyond the operator's control. It is probable that toxicity, possibly in many forms, is playing no unimportant part in the pathogenesis of some at least of the conditions which we now, for convenience' sake, are content to group together under the one label of "glaucoma," guided, as we are, by the one central and dominating feature of a rise in intraocular tension.

3. *A septic contamination of the eye at the time of operation* calls for little comment here. With ordinary care and the use of a large flap it should be a very rare event indeed.

Some surgeons (amongst others, Parker of Detroit, Hill Griffith of Manchester, and MacCallan of Egypt) advocate the performance of a complete iridectomy on the ground that quiet iritis is thereby avoided. My own practice has been to perform a button-hole iridectomy, and to use atropine freely if synechiæ tend to form. There are certain disadvantages which follow the making of a complete iridectomy—viz., (1) blurring of images; (2) dazzling complained of in bright light; and (3) the fact that we are deprived of the power of producing strong myosis, should we require to do so later on.

Of the preventive and curative treatment of those forms of sepsis which may lead to an increase in intra-ocular tension it is too early yet to speak, but there can be little doubt that the laboratory will in time come to the aid of the ophthalmologist in this direction. Meantime we must work on general principles.

Late Infections.

A number of cases of late infection after trephining are now on record, and considerable stress has been laid on the occurrence of this complication. There would seem to be a tendency to forget (1) that during the last four years an enormous number of eyes have been trephined; (2) that the condition for which this operation is undertaken is a very desperate one; (3) that many of the operators are still new to the method; and (4) that the same disaster has overtaken the subjects of other operations for glaucoma—e.g., Lagrange's and Herbert's procedures. Moreover, some of the cases recorded are not above challenge; one cannot fairly class under late infections cases in which inflammation first showed itself very shortly after operation. These should be included either under operation infections or possibly under auto-intoxications. Nor are the cases following injuries to be accepted without considerable reservations. Gifford has pointed out that neither Professor Lagrange nor I have met with one of these late disasters, and has, I think correctly, attributed our immunity to our technique of using "thick flaps." This matter has been already discussed above. Lagrange's experience is a very large one, extending over many years, whilst I am able to speak from over 1000 cases, of which more than 200 have been followed for periods varying up to four years. It is not my intention to attempt to belittle the importance of late infections following sclero-corneal trephining, or to suggest that such an occurrence constitutes the least reflection on a surgeon's methods; but in the case of an operative procedure, which is of so recent an origin as sclerocorneal trephining, it is obvious that we all have still much to learn as to technique, &c.

I would suggest two conditions which may pave the way for the occurrence of late infection. These are: 1. The persistence of a leaking fistulette somewhere along the line of the original conjunctival incision; with this is associated a shallow anterior chamber. The fistulette can be speedily closed by touching the spot with 2 per cent. silver nitrate solution on a swab. 2. The presence of a thin vesicular filtration scar. This latter condition has been very fully discussed already. It only remains to add that we should impress on our patients the risks of injuries or of conjunctival infections, and the need of speedily seeking expert advice in the event of any slight eye symptoms making their appearance.

I wish to say a very few words in conclusion on some features of operative procedure, which should in my opinion be avoided if possible in an endeavour to establish subconjunctival filtration.

1. *Inefficiency.*—My personal experience of sclerotomy is comparatively limited, but the general consensus of opinion seems to be that the end result is too often unsatisfactory, unless a portion of the coat of the eye is definitely removed. It is surely in the interests of both surgeon and patient to avoid the disappointments thus caused.

2. *Dangers.*—It is most important to make an operation for glaucoma as safe as possible and to eliminate all avoidable dangers. (*a*) The introduction of a keratome point into the shallow chamber of a glaucoma patient is, I think, objectionable, and a handicap to any method which requires it. (*b*) The making of a larger opening in the tunic of an eye than that which is required for the purposes of the fistula

about to be established obviously presents distinct disadvantages. (*c*) The necessity for performing the removal of the piece of the tunic (in other words the actual sclerectomy) on an opened eye is widely considered to be a hazardous and anxious procedure. In trephining we perform the actual sclerectomy on an eyeball which to the last moment remains closed and distended with fluid. Moreover, it may be claimed for trephining that, by virtue of the small aperture made, it approaches more nearly to the conditions, and therefore to the implied safety, of a sclerotomy, than does any other form of sclerectomy.

Welbeck-street, W.

ELECTROLYTIC PREVENTION OF LEAD POISONING.

BY KENNETH GOADBY, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H. CANTAB.,

SPECIAL MEDICAL REFEREE FOR LONDON FOR INDUSTRIAL POISONING; PATHOLOGIST AND LECTURER ON BACTERIOLOGY, NATIONAL DENTAL HOSPITAL.

IN a paper entitled "The Preventive and Curative Treatment of Industrial Lead Poisoning"[1] Sir Thomas Oliver discusses at length an electrolytic method of eliminating lead from the body, which he described as a "new, or bipolar bath," the method described being the use of four vessels, one for each foot and one for each hand, the two sets of baths holding the positive and negative electrodes respectively, as opposed to the method of a "single bath" in which one electrode, anode or cathode, is placed in the bath, the other or indifferent electrode being applied to the skin by means of a pad moistened with salt solution.

In the paper referred to a claim is made of the efficacy of this method for the treatment of chronic lead poisoning, based upon the supposition that "lead is probably present in the tissues in the form of metallic chloride or other inorganic salt," and that under the influence of the electric current it would be passed outwards and be deposited electrolytically on the aluminium electrodes. It is stated that under the influence of the electrolytic method the blue line present in the gums of persons suffering from lead absorption disappeared, and that lead was demonstrable upon the electrodes in the baths. It was therefore thought of interest to inquire experimentally into the behaviour of lead salts in relation to albuminous substances, and the possibility of the experimental removal of lead from the tissues of lead-poisoned animals.

The bath recommended by Sir Thomas Oliver consists of two arm and leg baths, sufficiently deep to allow immersion of the limb to the elbow or to the knee, the anode being placed in the foot bath and the cathode in the arm bath; the electrodes were of aluminium, and a current of 20 to 40 ma. was used at a voltage of 16. The baths were filled with salt solution. The experiments I have conducted were devised to follow, as far as possible, these conditions, but the current employed was varied from 20 to 100 ma. Blank control experiments were undertaken in every instance. Aluminium electrodes were used in the earlier experiments, but after washing the electrode with HNO_3 and passing H_2S for the detection of lead a black precipitate was obtained of iron sulphide; the aluminium electrodes were therefore abandoned and platinum used. Some trouble was also experienced with both the distilled water and sodium chloride, owing to both containing minute traces of both iron and copper when the ordinary laboratory materials were used; and special care was therefore taken to eliminate this source of error.

Account of experiments.—Six animals were subjected to experiment, four cats and two dogs. Lead nitrate was used, and 0·05 grm. per kg. body weight was inoculated intramuscularly into the muscles of the back and neck. After a variable period, 10 to 20 days, the animals were subjected to electrolysis; the forelegs were immersed to the shoulder in one bath, and the hind legs in another bath of normal saline; the electrodes, platinum soldered into platinum wire with pure gold, were placed in each bath, and a current controlled by a shunt resistance, voltmeter and milliampèremeter passed through. The animals were placed under an anæsthetic during the experiment.

With the first two animals a current of 30 ma. at 20 volts was used. After an hour's passage no deposit of lead was found on either electrode (cathode or anode). Towards the end of the experiment the animal's heart showed signs of great acceleration. This acceleration was much more pronounced when the whole four limbs of the animal were immersed than when only one foreleg and one hind limb of the same side were placed in the bath circuit.

In the third experiment the current used was increased to 100 ma. The heart beats became accelerated after 10 minutes' application of the current, the heart finally ceasing to beat. The current was stopped and artificial respiration and massage to the chest applied. The heart commenced to act again, but was hypersensitive to 30 ma. of current and finally ceased to beat. The electrolysis was continued for 30 minutes after the animal was dead, with a current of 100 ma. The electrodes were subsequently washed with hot 10 per cent. HNO_3 containing a few drops of alcohol, and the washings investigated for the presence of lead. No black precipitate was obtained with sulphuretted hydrogen, or any evidence of the presence of lead.

A fourth experiment with a cat gave exactly similar results, and no lead was obtained from the electrodes even after 1½ hours' exposure on four different occasions.

A dog was inoculated with lead nitrate, 0·05 grm. per kg. body weight being used. At the end of three weeks symptoms of lead paralysis were evident, and the animal was submitted to electrolysis. A current of 50 ma. at 20 volts was used, with normal saline baths free from lead and iron, and platinum electrodes of 300 sq. cm. surface; the time of exposure was one hour. Three baths were given, but the animal died from general lead paralysis. No lead was recovered from the electrodes on either of these occasions.

After death the animal's liver was removed and found to weigh 335 grm. A quantity, 162 grm., was removed and triturated in a mortar, normal saline added, and the whole placed in an electrolytic cell with platinum electrodes and a current of 0·14 ampère passed for 12 hours. The electrodes were then removed and tested for lead by washing in distilled water, boiling with 10 per cent. HNO_3, with a few drops of alcohol. The washings gave no black precipitate on neutralisation with KOH and passing H_2S. The substance was then transferred to a large evaporation basin, strong HNC_3 and potassium chlorate added, and the substance digested till all organic matter had disappeared, evaporated to dryness, incinerated, and the residue taken up in 10 per cent. HNO_3 and the fluid returned to the same cell for electrolysis. The conductivity was found much greater than before, and a considerable extra resistance was necessary to reduce the amperage to 0·14, the same reading as in the undigested liver emulsion. The cell was allowed to act for 12 hours. At the end of this time the anode was coated with a black deposit, which was found to be lead; the cathode was free from lead. The quantity estimated volumetrically was found to be 0·0049 grm. for the whole weight of liver.

Lead was therefore present in the liver, probably as an "albuminate"; it was not acted upon or deposited by the electric current until it had been freed from its organic combination, but when this was accomplished and a suitable electrolyte used a deposit readily took place. A metal adsorbed by albumin is undissociated. There was therefore no experimental evidence to show that lead is ionisable when present in the animal body, either in the incipient or established stage of lead poisoning. The absence of any deposit from the electrolysis of the animal's liver emulsion, subsequently shown to contain lead, as well as the much lower conductivity of the solution, points to little dissociation of lead ions in the body; and as without such dissociation no deposit of the metal is likely to take place this question was submitted to further tests as follows:—

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[1] THE LANCET, August 23rd, 1913, p. 527.

A 10 per cent. solution of lead nitrate was added to a 5 per cent. solution of egg albumin, the thick curdy precipitate was filtered off and washed with distilled water, and dialysed against distilled water for four weeks. Even at the end of this time traces of lead were found in the dialysis water. Suspended in water no black precipitate was obtained with H_2S, but on addition of HCl or KOH a thick black precipitate was obtained. With Millon's reagent the dialysate also gave red precipitate, as well as the biuret reaction with copper sulphate. The substance thus gave the combined reactions of lead and albumin, but still contained some free lead as shown by the washings.

About 10 grm. of the "lead albuminate" was next treated with 25 c.c. normal horse serum and allowed to stand for 12 days, after which the supernatant clear serum was pipetted off and tested electrolytically as follows. A cell was constructed with an inner and outer vessel; in the outer vessel was placed normal sodium chloride. The inner vessel consisted of a dialysis tube of parchment paper and contained the serum which had been in contact with "lead albuminate." Two platinum electrodes, 5 × 10 cm., were placed in the inner and outer vessels, and a current of 0·1 ampère at 8 volts passed, the apparatus being left all night at the room temperature. The electrodes, which were quite bright, were removed at the end of 14 hours, washed gently in distilled water, and subsequently boiled in 10 per cent. HNO_3, with the addition of a few drops of alcohol, and the fluid tested for lead with negative results.

The serum was then removed from the inner vessel, strong nitric acid and potassium chlorate added, and the fluid boiled and evaporated to a thin syrup, all the organic matter being broken up. 10 per cent. nitric acid was added, and the fluid transferred to the same cell and the current passed as before. In 30 minutes a well-marked black staining of the anode was apparent; this was dissolved off in 10 per cent. nitric acid as before, and gave positive tests for lead. A blank control made with the acid and potassium chlorate gave a negative result.

The serum had therefore taken up a proportion of the "lead albuminate" in an undissociated form which was not acted upon by the electric current under conditions closely resembling those of the animal's limb immersed in a saline bath. There is no support to the contention, therefore, that even if lead be stored up in the peripheral structures it is removable by electrical means. But the major part of lead recoverable from the body of persons dead of lead poisoning is found in the internal organs; thus Wynter Blyth[2] found 0·6 grm. in the liver, 0·003 grm. in the kidney, and 0·072 grm. in the brain. Hougounencq[3] found 0·258 grm. in the intestines, 0·005 grm. in the liver, and 0·0088 grm. in the brain of a person dead of lead poisoning. Dixon Mann[4] found the fæces contained large quantities of lead when administered by the mouth, and points out that the excretion of lead is mainly through the intestines; my own experiments[5] are in complete accord with this, and in many instances I have obtained considerable quantities of lead from the fæces of animals inoculated subcutaneously with soluble lead compounds, and I have also recovered amounts of lead from 0·001 to 0·008 grm. in the fæces of lead workers who were exposed to lead absorption, but who showed no clinical symptoms of lead poisoning.

In the paper quoted above it is stated that the lead present in the body at any time only amounts to a few grains, and that therefore the quantity eliminable by the electrolytic method is probably too small to determine, but in my experiments sufficient lead was present to be estimated by electrolysis when free from organic combination (0·0049 grm.); if, therefore, any deplumbising effect is produced by electrolytic baths the five experiments quoted would certainly have given some indication of its presence, but in every case a negative result was obtained. Ionic medication with iodine or salicylate is not comparable with the hypothetical removal of lead by ionic means, as in the application of drugs the electrolytes chosen are always dissociated, and their efficiency and penetrability depend upon their dissociation, while there is every reason to suppose that lead as an organic adsorption compound is not dissociated, as shown by the liver emulsion experiment. Lead chloride or any soluble salt of lead in the presence of albumin forms a thick, curdy, white precipitate, as does solution of albumose or peptone; any lead, therefore, circulating in the blood is unlikely to remain as a simple organic salt, but unless it does so—and there is no evidence to show that it does, and much to show that it does not—it will not undergo ionisation by small electric currents. Iron is easily deposited by electrolysis; if, therefore, Sir Thomas Oliver's contention is correct that lead is eliminated electrolytically by a double bath or any other method, the iron from the hæmoglobin of the red blood corpuscles should also be removed. Small quantities of lead no doubt have been found in the vessels in which lead workers' arms and legs were treated, as it is notoriously difficult to remove the last traces of lead from the hands of persons engaged in manipulating lead compounds, the fine dust penetrating the external layers of the epidermis and even filtering through the clothes. The hands and arms of a lead worker, after careful scrubbing with soap and hot water, may easily be shown to contain traces of lead.

The experiments *in vivo* and *in vitro* give no support to the contention that lead is eliminated from the animal body by the electrolytical methods tested, neither do they suggest any grounds for the adoption of electrolytic baths for the prevention or treatment of lead absorption or lead poisoning.

Harley-street, W.

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[2] Proceedings of Chemical Society, 1887–88.

[3] Meillère: Le Saturnisme, p. 73.

[4] Brit. Med. Jour., 1893.

[5] Legge and Goadby: Lead Absorption and Lead Poisoning, 1912.

KING EDWARD'S HOSPITAL FUND FOR LONDON: STATISTICAL REPORT ON HOSPITAL EXPENDITURE.—The very useful annual report of the King Edward's Hospital Fund, which gives statistics relating to the ordinary expenditure of 106 London hospitals, has just been issued for the year 1913. Taken together these hospitals provide a total of 9171 beds, and the expenditure during the year under notice was £1,058,898. This sum includes maintenance, administration, rent, rates, and taxes, and interest on borrowed money, but excludes capital expenditure. Regret is expressed for the increase in the cost per bed occupied and per attendance of out-patients, first noted in 1911, which has continued, the addition in 1913 representing about £27,000. It is, however, pointed out that this increase is not necessarily attributable to a disregard of economy. As a means of assisting hospitals to discover and check where it exists any tendency to wasteful expenditure these reports serve a valuable purpose, and those responsible are to be congratulated on having produced such a careful compilation of facts relating to the expenditure of our London hospitals.

ELECTROLYTIC TREATMENT OF LEAD POISONING.

BY W. H. F. OXLEY, M.R.C.S. ENG., L.R.C.P. LOND.

IN further elucidation of the question as to the possibility of the removal of lead from the body in lead workers by means of electrolysis, as described by Sir Thomas Oliver,[1] I have performed the following series of tests on workmen showing signs of lead absorption and on lead-poisoned rabbits.

Experiment No. 1.—The first step was to apply the treatment to a number of workers in lead smelting, litharge making, and white lead making. Eight men—some with marked blue lines, some with faint blue lines, and others who showed the very earliest trace of blue line—were picked out. A proportion were old hands who showed, besides the blue line, some evidence of lead absorption, such as pallor, anæmia, and tremors, while others were perfectly healthy. All stages in the process of absorption were thus included. The electrical apparatus was set up as described by Sir Thomas Oliver, a voltage of 16 being employed, the positive electrode being placed in the foot bath and the negative in the hand bath, and a current of 25 ma. was passed through for 40 minutes (a dosage of 60 coulombs of electricity), and this was increased in the later baths to 35 ma. (84 coulombs). A bath was given on alternate days. Three of the men had 18 baths, 2 had 14, and the remainder 6, 7, and 8 respectively. The result in all cases was absolutely negative. There was no apparent change in the blue line except in the case of one man, who had been scrubbing his gums with a hard brush and had excoriated the mucous membrane. The signs of lead absorption were unaltered. All the men complained of feeling languid after the baths, and one stated that he had lost weight, while two had a little dermatitis on the legs and forearms.

Experiment No. 2.—It was next attempted to confirm Sir Thomas Oliver's statement that lead was found in the bath water and electrodes after use, and the following was the method employed. The electrodes were scrupulously cleaned with HNO_3, and the water used was ascertained to be free from lead. A man with a marked blue line was taken, and his arms and legs were well scrubbed. He was then placed in the baths for 40 minutes without current, when the water was again ascertained to be free from lead. This was done to avoid the possible error due to lead from the skin contaminating the water. The current was then turned on, and he was given 35 ma. for 40 minutes (84 coulombs), when the electrodes were removed from the water, thus stopping the current, and the water from both arm and foot bath was tested separately. No lead was found. Each electrode was then tested as follows: washed in HNO_3, solution neutralised with KHO, faintly acidulated with HCl, H_2S passed through. No lead present. On addition of Am_2S to solution a heavy black colour appeared, separating as a black precipitate. The precipitate was dissolved in HNO_3 and neutralised with KHO; on addition of KCNS a deep blood-red colouration appeared, indicating the presence of iron. A small piece of one of the electrodes was then tested; iron was present. It was thought possible that this iron precipitate might have been confounded with lead if no confirmatory tests had been made.

Experiment No. 3.—Another experiment was made on exactly the same lines as No. 2, except that the aluminium electrodes supplied with the apparatus were exchanged for 6 inch by 6 inch platinum sheets. No trace of lead was found.

Experiment No. 4.—A bath was given to 6 men successively, using the same water in each case. They were all old hands; 1 had had a previous attack of colic, 3 were definitely anæmic, and all had blue lines. Each was given a dose of 84 coulombs. No trace of lead was found either on the electrodes or in the water.

Thinking that it might possibly be contended that, although no lead was found in the baths, the passage of the electric current through the body might have the effect of rendering the lead more easy of elimination by the kidney the following experiment was performed.

Experiment No. 5.—A 24-hours' specimen of the urine of two old hands was examined for lead; none was present. On the following day a bath of 35 ma. (for 40 minutes) was given to each, and the 24-hours' urine again collected. No lead was found (the electrolytic method was used). A negative result was also obtained in testing the water and electrodes in this case.

The results up to this having been uniformly negative, it was decided to conduct a series of tests on rabbits and to submit them to a larger dosage of electricity. Two rabbits were taken.

Rabbit No. 1 was given 9 doses of 0·05 grm. of lead nitrate hypodermically and 3 doses of 0·025 grm. It lost weight rapidly, and on the twenty-second day developed paralysis, dying on the twenty-fourth day. The organs were examined, and 6·25 mgm. of lead recovered.

Rabbit No. 2 was given five doses of 0·05 grm. lead nitrate and three doses of 0·025 grm. It lost weight rapidly, and on the twenty-third day was given a bath of 30 ma. for 60 minutes, the fur on the legs having been removed. The water and the electrodes were then tested for lead, and none was present, but iron was again found in the washings from both electrodes, and a trace of copper in the water, which latter had probably come from the copper worm of the distillation apparatus. On the twenty-sixth day it was given a bath of two hours' duration at 35–40 ma., over four times the dosage employed by Sir Thomas Oliver. No lead was present either in water or electrodes. From the thirty-second day it was fed with 0·05 grm. daily for four days and 0·1 grm. for six days. It lost over 100 grm. in weight and became extremely weak. It was then given a bath of 36 ma. for four hours. No lead was found in the bath or electrodes. It was then killed, skinned, and the body bathed with a current of 90 ma. for three hours. No lead was found. 30 grm. of the liver were made into emulsion with physiological saline solution and placed in a dialyser floating in distilled water, and a current of 35 ma. passed through for 40 minutes. The water and electrodes were then examined for lead with a negative result. A subsequent chemical analysis of the liver showed it to contain 2·2 mgm. lead.

Conclusion.—These results would appear to show that the treatment as described by Sir Thomas Oliver has no effect upon the blue line, and does not extract lead from the body. The usual tonic effect of an electric bath was not noted, and I am forced to the conclusion that no practical good would result from the regular treatment of lead workers in this way. The experiments with the rabbit show a consistently negative result even under more favourable conditions for lead extraction than can be obtained in the human subject.

A consideration of the conditions under which we are working will, I think, show that these negative results are only what one would expect. The body may be regarded as a mixture of different salts in solution as electrolytes, of a strength of about 8 per 1000, added to which there would be a small percentage of some lead compound or compounds, the exact nature of which we do not know, nor do we know whether they are present in the condition of dissociation necessary for them to become electrolysable. However that may be, the amount is very small; taking Legge and Goadby's figure of 0·005 grm. per kg. as the minimal poisoning dose,[2] the proportion of lead ions to tissue ions would be not more than 1 to 1600. Now it has been found that in a solution of mixed electrolytes all the electrolytes assist in the conduction of the current, and take part in the migration towards the poles, the ratio of concentration of ions not undergoing change.[3] They are not all deposited on the electrodes, but they are using up the current, thus leaving very little to take part in the electrolysis of the lead. Further, if the proportion of any one electrolyte be very small, it is impossible to extract it without a large increase in the potential.[4] Exact figures are impossible to give, but taking the tissue ions as being very largely sodium, a calculation will show that the amount of electricity available for the electrolysis of the lead would not be sufficient to deposit more than 0·04 mgm. of lead per bath, which is quite a negligible amount.

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[1] THE LANCET, August 23rd, 1913, p. 527.

[2] Lead Poisoning and Lead Absorption.

[3] Leblanc: Electro-chemistry.

A further difficulty in the extraction of lead from the body by this means appears to have been overlooked. I refer to the extremely slow rate of the penetration of ions through an animal membrane or similar substance. Lodge,[5] using a tube of gelatin, found the velocity for hydrogen ions to be 10·8 mm. per hour, and for sodium ions 1·26 mm. Sloan[6] found the penetration of Cu ions through the ox stomach with a current of 5 ma. for five hours to be 3 mm., and in white of egg, with an amount of 100 coulombs, after two hours the penetration was 2·5 mm.

Taking these two factors into consideration—first, the large proportion of total current used up by the tissue ions, and secondly, the slow rate of penetration of the ions through the skin—it would appear that the total possible effect of a bath would be to remove from the superficial layers of the skin an amount of lead not exceeding 1/7500th part of a grain. The conditions are the reverse to those obtaining in ionic medication, where concentrated solutions are used, and the whole of the current is, near the surface at any rate, available for the driving inwards of the drugs used. It is, of course, possible that the effect of the baths may be to increase the elimination of lead by the ordinary channels. Oliver, however, states that after the baths the excretion of lead by the kidneys is diminished, and in the two examinations made by me no lead was found after the baths.

I am much indebted to Dr. A. W. Stewart, of the Royal Institute of Public Health, and to Mr. Cowan, manager of Messrs. Lock and Lancaster, Bridge-road, Poplar, for the help given to me in these investigations.[7]

East India-road, E.

OBSERVATIONS ON THE IMPROVISATION OF APPARATUS IN THE TREATMENT OF CERTAIN FRACTURES IN MODERN WARFARE.

BY J. H. WATSON, M.B., B.S. LOND., F.R.C.S. ENG.,
SURGEON, VICTORIA HOSPITAL, BURNLEY;
AND
T. SNOWBALL, M.B.

II.[1]—TREATMENT OF FRACTURES OF THE UPPER ARM.

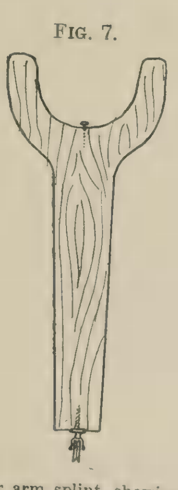
THE great necessity for improvising suitable apparatus for fractures in modern warfare is most emphatically pointed out by von Saar in his experiences of the Balkan war. Considering that the large number of wounded suffering from fractures averages almost 50 per cent., he was amazed at the chaos which prevailed as to their treatment. Even in well-equipped base hospitals they were submitted to all sorts of rough-and-ready methods. No particular routine was adopted; each surgeon employed his own peculiar methods, often devoting his more particular attention to operative cases whilst frequently grossly neglecting the fractures. We cannot do better than quote von Saar's own words here:—

> I believe that the first interest of the war surgeon should be directed to the wounded soldier with the view not only to his recovery, but also to fit him for an early return to active service, without any regard to purely medical or surgical interest; in this connexion a soldier with a well-healed fracture of the extremities is of just as much value as one who has had a successful trephining or laparotomy. I am convinced that with a good form of fracture treatment in war, we can be of the greatest service to the individual and consequently to the State.

From a large experience of fractured upper extremities the best results were obtained by means of Borchgrevink splints which were modified to some extent. It must be remembered that fractures in war from bullet wounds are for the most part complicated—complications from infection arising from clumsy first aid or the want of first aid at all. They are almost invariably comminuted, and usually of such an extent that there are considerable deformity and shortening. Such cases cannot be kept in position with simple splinting (even the triangular splints of Middeldorpf and von Hacker soon become displaced), and require an extension apparatus if anything like a good result is to be obtained. There are many ways of applying extension to the arm and forearm, mostly cumbersome, by means of a weight and pulley, but scarcely adaptable even at a base hospital. Moreover, one is so confused by the various conflicting opinions of numerous writers that it is difficult to formulate definite lines. We repeat again that the method for adoption in modern warfare is that which is most easily carried out and which is of proved efficiency, and for this reason we give in detail von Saar's modification of Borchgrevink's method of elastic traction.

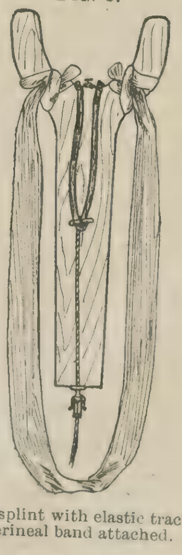
The splint is made of soft wood about ½ to ¾ inch thick. The upper end is in the shape of a horseshoe, the width of the concavity being such as easily to fit the shoulder when well padded; the shaft is about the width of the arm, and is long enough to extend some 3 or 4 inches below the elbow. (Fig. 7.) The extension with this splint was obtained in the following way: A piece of adhesive plaster 2 inches wide is applied to the inner and outer aspects of the arm, leaving a loop

FIG. 7.



Upper arm splint showing pulley and nail inserted.

FIG. 8.



Upper arm splint with elastic traction and perineal band attached.

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[4] Classen: Chemical Analysis by Electricity.

[5] Lewis Jones: Ionic Medication.

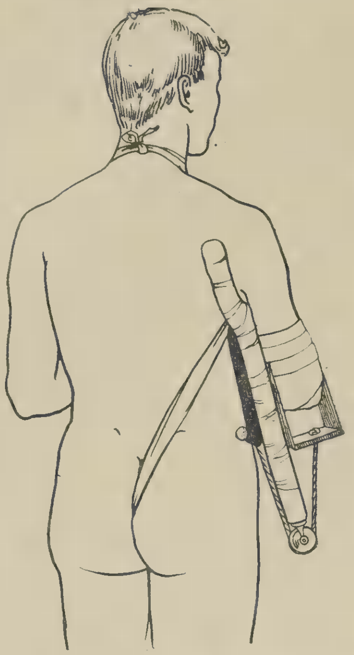
[6] Brit. Med. Jour., August 31st, 1912.

[7] Further references are: Leduc, Annual Meeting, British Medical Association, 1907. Lodge, Conduction of Electricity, Brit. Med. Jour., Oct. 14th, 1911.

[1] No. I. was published in THE LANCET, Sept. 26th, 1914, p. 789.

for the insertion of a rectangular piece of wood perforated at the centre and slightly wider than the arm at the epicondyles, which are protected from pressure by a gauze bandage. This plaster is maintained in position by imbricating narrow pieces of leucoplast. (Fig. 9.)

FIG. 9.

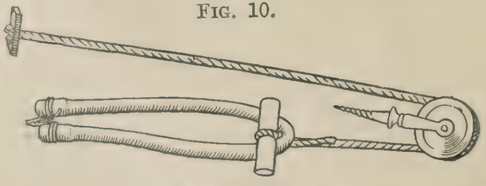


View of the lie of the splint from behind without arm bandage.

Now drive a strong nail into the concavity of the fork of the splint, leaving about ¼ inch free. The purpose of this nail is to suspend the elastic traction apparatus. The forks of the splint are then padded with wool, which may be secured by a few turns of bandage. The side which is to lie nearest the inner side of the arm is also suitably padded and a screw pulley is fixed in the lower end. (Fig. 9.) An assistant places the splint in position, the padded limbs of the fork resting lightly on the anterior and posterior folds of the axilla. A perineal band is affixed, which we have found to be most easily done by taking a loop of bandage, fixing it to the base of the posterior horn of the splint by a clove hitch knot, taking the double loop of the bandage under the perineum, and twisting one end round the base of the anterior horn and tying it firmly to the other end. (Fig. 8.) This prevents both displacement upwards and pressure on the axilla. (Fig. 9.)

We will now describe in detail the elastic traction apparatus, particularly as it occurs again in the description of the forearm extension. (Fig. 10.)

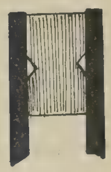
FIG. 10.



Elastic traction apparatus.

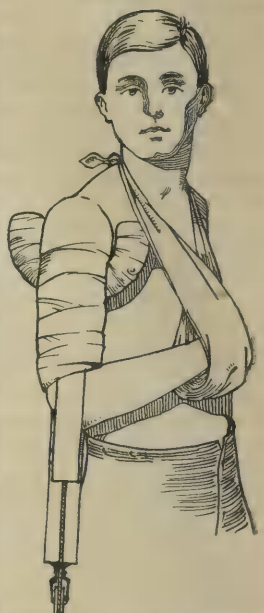
A piece of drainage-tube about the thickness of a finger and about 14 inches long is taken, the open ends of which are plugged with a piece of round wood about ⅔ inch long in which a deep notch is cut in the centre in order that one end of a strong piece of string may be tied over the groove on the outside of the tube and so prevent slipping. (Fig. 11.) The other end of the string is similarly tied to the other end of the rubber tube, leaving a short intervening loop about 1 inch to 2 inches long; by this means the drainage-tube is hung in loop fashion on the side of the splint nearest the body. (Figs. 8 and 9.) The little piece of wood which anchors the cord in the loop of drainage-tube is improvised out of a short piece of soft wood made round or square as desired, and notched in the centre to receive the string. If the extension begins to slacken it is easily tightened by shortening the string. The forearm is supported at right angles to the arm by a simple wrist sling, and the arm is bandaged securely over the splint. (Fig. 12.)

FIG. 11.



End of rubber tubing showing manner of inserting plug.

FIG. 12.



Anterior view of splint fixed in position. (In this diagram the splint has been drawn too long.)

The advantages, in brief, are: 1. It is comfortable and not easily displaced, comparing favourably with the usual triangular splints. 2. It permits any degree of extension likely to be required, and the amount is easily regulated. 3. During the day the patient can go about with it. At night the arm is supported by a pillow. 4. It has been tried with many severe fractures of the upper arm and has been found to be efficient.

(To be continued.)

A CENTENARIAN.—Mrs. Margaret French died at Hampstead on Sept. 26th in her 101st year.

BRISTOL GENERAL HOSPITAL.—At the half-yearly meeting of this institution what would have been an interesting report in time of peace gained additional interest from its references to the war. It appears that when war broke out an urgent request from the Royal Infirmary for beds into which some of their patients might be transferred was received, the infirmary committee having promised some time ago to hand over the whole of their institution to the War Office if it was wanted. When the infirmary authorities decided that it would be impossible to carry out this project fully they notified the General Hospital that there would be no need for the transfer of beds that had been arranged for. The hospital at once decided to open the new maternity ward, giving preference to the wives of soldiers and sailors at the front, at the same time holding themselves in readiness to offer beds to the War Office, should the need arise. As for the ordinary work of the institution, it showed an increase in in-patients, out-patients, and the daily average of occupied beds over the preceding year; both income and expenditure also showed an advance, the former, however, by twice as much as the latter. Four members of the honorary staff and two of the residents are with the army or navy, while nearly half the *à la suite* staff of the Second Southern General Hospital is composed of members of the honorary staff of the Bristol General Hospital. The hospital pathologist and several nurses are also serving with the Territorial Army.

Reviews and Notices of Books.

Dietetics, or Food in Health and Disease.

By WILLIAM TIBBLES, L.R.C.P. Edin., M.R.C.S. Eng., M.O.H., LL.D., M.D. (Hon. Causâ) Chicago. London: Baillière, Tindall, and Cox. 1914. Pp. 627. Price 12*s.* 6*d.* net.

THIS is an admirable work, full and yet concise, well arranged, carefully planned with a due proportion of space to each division of subject, and written so simply and clearly that it is quite readable in spite of the enormous mass of detail with which it is loaded. If there are sections which seem unduly long, such as the chapter on vitamines, their length is necessary for the careful estimation of a large bulk of new, original, and important experiment.

The book is divided into two main sections, of which the first treats of the physiology and physics of food. The first chapter, which deals with the chemical composition and classification of foods ends with 11 pages of tabular statement concerning every conceivable item of European diets, with their percentage compositions and their heat and food values. But the author is far too conversant with his subject to take the mere calorie value of an article as a bald index of its value as food, and wisely considers in one admirable chapter the heat value and digestibility together; for we live not by the food which we eat but by the food which we digest, a point which is illustrated later on by Dr. Tibbles's criticisms on "Fletcherism." The calorie value of food is not changed by mastication, but its digestibility is increased considerably.

By far the most important chapter in the first, or theoretical, part of the book discusses the amount of food required. It consists of 75 pages, of which much is devoted to the vexed question of protein requirements. The author's conclusions are very carefully drawn. The consumption of a greater proportion of protein than the essential minimum (compare Chittenden's standard) is advantageous by acting as a stimulant to metabolism and a ready source of energy. A very temperate and judicial survey of the use of stimulants closes the first part of the volume, and a far larger part is devoted to diet in various diseases.

Though little of this latter part of the book is original we can testify to the merits of the compilation. The striking feature is the care with which space is allotted to those conditions in which diet is of most importance, such as the indigestions, the diarrhœas, gout, and, of course, diabetes. A very full consideration is given to the vitamines and the group of tissue degradations now known as the deficiency diseases, among which beri-beri, scurvy, and pellagra, may be ranged. Dr. Tibbles's account is full, exact, and clear, while it is brought well up to date, and includes a résumé of the recent work of Osborne, Mendel, and others on the "insufficient" proteins. In following the phosphorus deficiency theory of Schaumann it is interesting to note the high phosphorus-value of rye-bread, despised of English politicians.

This book is a storehouse of information which will yield a fruitful supply for many years.

Anemia and Resuscitation: an Experimental and Clinical Research.

By GEORGE W. CRILE, Professor of Surgery, Western Reserve University Medical College, Cleveland, Ohio. London and New York: D. Appleton and Co. 1914. Pp. 305. Price 21*s.* net.

THE author makes "an endeavour to solve practical clinical problems which both the surgeon and the internist confront." The protocols of the author's experiments are published in considerable detail, with a view to save other workers unnecessary repetition.

Anæmia of the central nervous system—experimental and clinical—and cerebral anæmia through ligation of the common carotid arteries are first considered (pp. 4–72). In order to determine the limits of recovery after a total anæmia of the central nervous system 30 dogs were anæsthetised by chloroform and resuscitated after a lapse of from 3–14 minutes. If resuscitated in less than 5 minutes the recovery of function was rapid, and was strikingly free from the after-effects that characterised longer periods. Of 12 animals subjected to anæmia from 7–8½ minutes, only one recovered after 7½ minutes of anæmia. The remaining dogs all died. The neurocytes of the fatal cases—examined by the Nissl method—showed not only chromatolytic changes but also those indicative of cell death. Marchi's method revealed degeneration of nerve fibres. The important conclusion is reached that in anæsthetised dogs the average limit of total cerebral anæmia, estimated from cessation of the heart sound to return of circulation, which admits of recovery, is between 6 and 7 minutes. An interesting analysis from the literature of 500 cases of ligation of the common carotid artery is given. The author advocates, as a preliminary step to permanent ligation of the common carotid artery, that temporary closure by means of a clamp should be done when possible. We think that he is more than justified in his contention as well as in his emphatic and convincing pleading for the course he so strongly recommends. Closure of the common carotid, however, does not arrest hæmorrhage so completely as does closure of the external carotid.

Anæmia of voluntary muscles in man and animals, occlusion of the abdominal aorta, and ligation of the main arterial trunks of the leg in man are next dealt with; then follows a chapter on ischæmic paralysis and the clinical applications of the foregoing phenomena. Roughly, it may be taken that anæmia of a dog's thigh of seven hours' duration, brought about by an Esmarch bandage which was tightened until arterial pulsation ceased, the dog being under morphia and light ether anæsthesia throughout the time of application, is followed by permanent paralysis. The knee-jerk is lost after six hours' anæmia. Indeed, arrest of the circulation of an extremity for more than two hours is not wholly safe, while the longer the anæmia beyond two hours the greater the degree of temporary or permanent paralysis. In the absence of personal clinical experience 50 cases of obstruction of the abdominal aorta are collated, examined, and criticised. Perhaps the practical surgeon will read and assimilate the author's cogent remarks on the errors in the treatment of fractures, the use of the frequent external application of alcohol in preventing the formation of bed sores, flap tension, and suture tension. Now that abdominal operations are so frequently performed no chapter in the whole of this most suggestive contribution to physiology and surgery is more illuminating than that on anæmia of the small intestine and the effects of interference with the circulation for different lengths of time under different conditions. The important principle is established in operations for gangrene of the intestine that the patient must be protected at all hazards against the absorption of the exceedingly toxic fluid in the gangrenous tissue. The toxin of anæmic gangrene requires several hours to cause the first symptoms. The author considers that in cases of acute intestinal obstruction the most important lesions are in the brain. Anæmia of the kidneys and spleen is considered. For the surgeon what the author has to say about resuscitation of the body as a whole, including resuscitation of the respiratory and circulatory apparatus and also about his own method of resuscitation, will prove well worthy of study.

This is a contribution to practical surgery, based primarily on clinical observation and experience, which the author and his associates have illumined by experimental physiological research of far-reaching importance. The author proves conclusively the immense advantage of studying all surgical problems from a physiological as well as from a clinical point of view. It is worthy of the highest commendation.

A Text-book of General Bacteriology.

By EDWIN O. JORDAN, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Fully illustrated. Fourth edition, thoroughly revised. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 650. Price 13*s.* net.

ORIGINALLY published in 1908, this book has now reached its fourth edition and evidently meets the needs of a considerable number of readers. The previous editions have been reviewed at length in THE LANCET. The arrangement and scope of the work are similar to those of most other bacteriological text-books, and it has the merits of lucidity and systematic planning in common with other works of American authorship. It claims to differ somewhat from other text-books on bacteriology, however, in that it treats the subject as a part of a general scientific education rather than from the narrower standpoint of the technical instruction of the medical student. The new edition has been somewhat enlarged, and certain sections have been rewritten and others rearranged. The most important change is the introduction of a chapter on the filterable viruses which though in no sense complete yet gives a succinct account of those of the greatest pathological importance. The section on leprosy has been added to and now represents modern views more closely than did the previous edition. Whooping-cough is treated more fully, and other alterations have been made to bring the work up to date. The illustrations are good and well selected from classical works, and the book is excellently produced as were the previous editions.

JOURNALS AND MAGAZINES.

Indian Journal of Medical Research. Vol. I., No. 4. —This number contains a reprint of the very important sanitary "resolution" of the Government of India, dated May 23rd, 1914, in which is given a summary of the history of the attempts made since 1859 to improve the health of the native populations and to develop sanitary organisation throughout the country. It also summarises the advances which have been made of late years in our knowledge of certain diseases and their prevention, such as malaria and plague. The resolution may be regarded as setting out to all concerned the present sanitary policy of the Government of India. In THE LANCET of July 18th we gave a résumé of this important document, which shows how much progress has been made during recent times in the sanitary administration of India. The next three original articles relate to the subject of kala-azar. The first of these is by Dr. R. Row, of the F. D. Petit Laboratory, Byculla, Bombay, describing, with illustrations, experimental leishmaniasis in the monkey and the mouse induced by the parasites in culture. The second article is by Dr. Vishnu T. Korke, who is engaged on special duty in connexion with the kala-azar inquiry, and is entitled "A Note on the Production of Localised Lesions by Leishmania Donovani in Macacus Sinicus." The third deals with the Epidemiology of the Disease, and is contributed by Captain F. Percival Mackie, I.M.S., in the form of a report on Kala-azar in Nowgong (Assam), illustrated by maps and charts, and giving also an account of a series of experimental observations made on animals. Some attention was devoted by Captain Mackie to the question of human infection through the agency of bed-bugs, but so far no confirmation of this agency has been obtained. Captain Hugh W. Acton, I.M.S., and Captain R. Knowles, I.M.S., furnish a joint paper, with illustrations, respecting their Studies on the Halteridium Parasite of the Pigeon, Hæmoproteus Columbæ (Celli and San Felice). A Practical Note on the Treatment of Swamps, Stream-beds, Ponds, Wells, and Pools, with a view to the Destruction of Mosquito Larvæ, is supplied by Mr. H. C. Wilson, piscicultural expert to the Government of Madras. Captain E. C. Hodgson, I.M.S., contributes a preliminary note, with map, on Malaria in the City of Madras. The Misleading Reactions obtained with Precipitating Antisera, and How to Avoid Them, forms the subject of a joint paper by Lieutenant-Colonel W. D. Sutherland, I.M.S., and Assistant Surgeon G. C. Mitra, I.M.S. A preliminary note on experimental researches connected with the standardisation of vaccines is contributed by Captain H. C. Brown, I.M.S., of the Central Research Institute, Kasauli; and Military Assistant Surgeon G. H. Blaker, of the same institute, supplies a note on the preparation and standardisation of typhoid vaccine. The Agglutination Reaction after Typhoid Inoculation is the title of a short paper with accompanying charts furnished by Assistant Surgeon A. W. Dyer, of the Station Hospital, Kasauli. A simple method of estimating the amount of gas produced by gas-forming bacteria is described by Captain J. Cunningham, I.M.S. The last article is a joint contribution by Captain J. A. Cruickshank, I.M.S., and Captain R. E. Wright, I.M.S., both of the Pasteur Institute of Southern India, Coonoor, on Filariasis in Cochin, with numerous illustrations. It appears from this paper that nearly 21 per cent. of the people of Cochin harbour microfilariæ in their blood, and that close upon 13 per cent. suffer from elephantiasis. About 33 per cent. of the general population show definite signs of filariasis in one way or another. The filaria in Cochin is almost certainly filaria bancrofti, and the culex fatigans is regarded there as an efficient mosquito intermediary, though others may also act as carriers of the infection.

Annali dell' Istituto Maragliano. Vol. VII. Fasc. 5. June, 1914. Piazza del Popolo 11, Genoa.—The Maragliano Institute, founded by the professor of clinical medicine at the University of Genoa for the study of tuberculosis and other infective diseases, publishes in this number four interesting articles. Dr. A. Connio gives the result of his experiments on the influence of the method of sterilisation on the toxicity of dead tubercle bacilli. He found that the toxicity was definitely influenced by the method used. It was little changed by a temperature of 70° C., but considerably by one of 100°; little affected by chloroform, but markedly diminished by extraction with ether. Investigations on the herpes of pneumonia by Dr. C. Trevisanello disclosed the fact that the pathogenic germ is met with in these eruptions in a pure state. Such diplococcus is in a condition of attenuated virulence, but may acquire its primitive virulence when subject to several passages in culture media, and may assume all the special characteristics of Fraenkel's pneumococcus. This paper has a practical application from a prophylactic point of view. Dr. A. Bertolini contributes a lengthy paper on the Influence of Hepatic Autolysis on the Toxicity of Diphtheria Toxin, a paper of considerable interest, although not pretending to apply to human pathology the results of laboratory experiments. The final article, by Dr. Barlocco, treats of the chemio-physical relations between the cerebro-spinal fluid and the blood serum in healthy and diseased subjects.

Journal of Laryngology, Rhinology, and Otology.—The issues for June and July contain a translation of a paper entitled "The Rhinogenic and Otogenic Lesions of the Third, Fourth, Fifth, and Sixth Cranial Nerves," by Ladislaus Onodi, of Budapest, which was read and preparations shown at the annual meeting of the Belgian Society of Otology, Rhinology, and Laryngology at Brussels in July of last year, when preparations were shown. The author describes the anatomical relationships of the sphenoidal sinus to the nerve-trunks of the cranial nerves liable to become involved. He then discusses the etiology of rhinogenic and otogenic lesions of the oculo-orbital nerves, first consideration being given to the infection and the extension of the pathological process. The number of such cases which have been published is somewhat small, and this enhances the value of the paper which is well illustrated with photographs of the author's anatomical preparations. A good bibliography is appended. The August issue contains an article by J. van der Hoeve Leonhard, of Amsterdam, entitled Bi-submucous Resection of the Septum Nasi. The author's modification of the typical operation is described and is intended for appropriate cases to avoid perforations of the septum in cases in which the latter could scarcely be prevented in proceeding according to the usual methods.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

SANAPHOS.

(THE BRITISH MILK PRODUCTS COMPANY, LIMITED, 69–70, MARK-LANE, LONDON, E.C.)

Sanaphos is described as a phosphated milk product. According to our examination it is sharply distinguished from casein preparations which are said to be reinforced with organic phosphorus compounds, inasmuch as no less than 80 per cent. of sanaphos is rapidly soluble in cold water, and amongst the soluble portions we find that 25 per cent. consist of casein itself containing also milk albumin. Associated with this soluble casein is an organic phosphorus compound showing a total of phosphorus content of 0·70 per cent. With water the powder gives a fluid which tastes and appears like milk. It seems evident from this that the milk basis produces milk again on restoring to it the water which has been eliminated in the desiccating process. It is, however, practically free from fat, which in a dry powder is apt to get rancid owing to oxidation. Further, the uniform fluid so obtained contains the activities of raw new milk according to the well-known tests for oxidases. The presence of the active enzymes of raw milk is, of course, of the utmost physiological importance. In pure casein preparations these ferments are not likely to be present owing to the chemical and physical methods employed for its separation. In sanaphos, therefore, in addition to the presence of admittedly easily assimilable organic phosphorus compounds, the vehicle is "live" milk in which in powdered form are preserved the physiologically active enzymes. The claims in regard to this preparation as to its value in neurasthenia, enfeebled nervous conditions, mental and physical fatigue, and so on, should receive attention, since assistance is reckoned to be given to the assimilation of organic phosphorus compounds by the activities of ferments.

ACROSYL.

(THE ACROSYL COMPANY, SUTHERLAND HOUSE, LLOYD'S AVENUE, LONDON, E.C.)

Acrosyl is a clear, bright fluid containing cresols of special germicidal activity in an alkaline medium and soap. It mixes with water in all proportions, giving a perfectly clear fluid. On analysis by a method which originated in THE LANCET Laboratory[1] the cresols present amounted to approximately 50 per cent. This method is based on the separation of fatty acids from the phenols or cresols by the use of baryta. The claim made in regard to germicidal activity is that acrosyl is rather more than double that of an equivalent of carbolic acid (2·07). In separating the cresols we found that they showed an iodine value equal to half that of pure phenol. This substantiates the stated carbolic co-efficient of 2·07. Apparently the iodine value is inversely that of the germicidal value expressed as a carbolic acid co-efficient. Soapy and alkaline solutions of powerfully germicidal cresols prepared on the lines of acrosyl are widely appreciated in surgical work on account not only of their antiseptic value but because also of their important detergent and cleansing properties.

HÆMORRHOIDAL SUPPOSITORIES.

(MESSRS. ALLEN AND HANBURYS, LIMITED, PLOUGH-COURT, 37, LOMBARD-STREET, LONDON, E.C.)

These suppositories suggest a modern method in regard to the treatment of hæmorrhoids and inflammatory conditions of the rectal mucosa. The active constituents are respectively iodol, resorcin, suprarenal extract, and balsam of Peru. The advantages of this combination for the particular purpose will be easily recognised when the antiseptic, antihæmorrhagic, and soothing activities of the successive ingredients are considered. The suppositories are shaped conveniently for application, and the fatty basis readily distributes its medicaments at the body or rectal temperature.

HAIR TINT (BROWN).

(MESSRS. HINDES, LIMITED, 3, GREAT QUEEN-STREET, KINGSWAY, LONDON, W.C.)

We have examined a sample of this preparation with the view of determining whether it contained any constituents which could be regarded as of an injurious nature. We are able to say that it contains no scheduled poison, and on the constituents being disclosed by analysis it is obvious to us that it can be used for the purpose claimed with safety so long as the instructions for its use are followed.

CHELONA WINE (TURTLE PORT).

(THE MEDICAL ENTERPRISE SOCIETY, LIMITED, 25, PALACE CHAMBERS, 9, BRIDGE-STREET, WESTMINSTER, S.W.)

We have had the opportunity of examining the turtle basis which is employed in producing this wine. It consists of a watery extract which is subsequently evaporated to dryness. It contains just over half its weight of real proteins. It resembles meat extract in appearance, showing the presence of 33·03 per cent. of water, and has that peculiar flavour which those familiar with the attractions of turtle soup will easily recognise. The same flavour will be recognised in the wine, and analysis shows that in the process of combining with it turtle extract the proteins amount to 0·286 per cent., representing approximately 1·4 per cent. of raw turtle. Further results of analysis give the following figures: Total solids, 7·46 per cent.; mineral matter, 0·30 per cent.; alcohol by volume 21·19 per cent., and sugar 7·10 per cent. We do not doubt at all that the wine contains a moiety of the nourishing constituents of the turtle, but in the process there must be waste of valuable material, inasmuch as the nutrient portions of the turtle are not compatible with a wine of the alcoholic strength of that submitted to us, while the natural tannin of all genuine wines is opposed to a complete solution of proteins. In any case, when alcohol is a medium the prescription must clearly only be admissible under the direction and control of the medical adviser.

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[1] Vide THE LANCET, Nov. 13th, 1909, p. 1456.

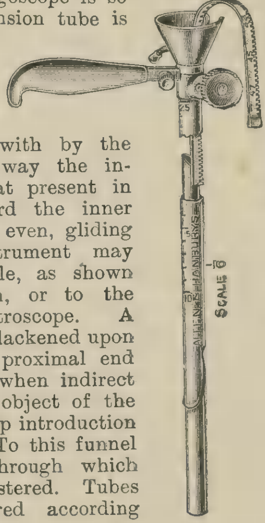
H.P. SAUCE.

(MIDLAND VINEGAR COMPANY, LIMITED, ASTON CROSS, BIRMINGHAM.)

We have examined a sample of this condiment which has been submitted to us, chiefly in regard to its freedom from impurities that may be incidental in pickle manufacture. It contained no metallic impurities or objectionable preservatives. Careful search was made in particular for copper, but none was found. The pickle, we are told, is made under strict hygienic precautions, and we can find no reason for discrediting this statement, and the evidence is in favour of pure and good materials being employed in its preparation. It makes an appetising adjunct to food.

New Inventions.

A NEW FORM OF BRONCHO-ŒSOPHAGOSCOPE.



THIS form of broncho-œsophagoscope is so designed that the inner or extension tube is extended by means of a screw adjustment, on the principle of the coarse adjustment of a microscope, and it is constructed in such a manner that its lumen is not interfered with by the mechanism adopted. In this way the inaccurate and clumsy method at present in use of forcibly pushing forward the inner tube is avoided, and a smooth, even, gliding motion substituted. The instrument may be fitted to an ordinary handle, as shown in the accompanying diagram, or to the handle of a Brüning's electroscope. A detachable and slotted funnel, blackened upon its inner aspect, fixed to the proximal end of the outer tube, is provided when indirect illumination is employed, the object of the slot being to permit of the deep introduction of instruments with handles. To this funnel is attached a small tube, through which an anæsthetic may be administered. Tubes of different sizes are required according to the age of the patient.

The makers are Messrs. Allen and Hanburys, Limited, of Wigmore-street, London, W.

Manchester. WILLIAM MILLIGAN, M.D., C.M. Aberd.

APPARATUS FOR ARTIFICIAL PNEUMOTHORAX.

THE many controls necessary in the usual forms of apparatus for artificial pneumothorax induction have been abolished by an addition I have designed. The gas tubes from the oxygen and nitrogen bottles, the gas delivery tube to the T piece on the manometer, the water tubes from gas bottles and reservoir are all brought to a single controlling regulator fitted with a pointer indicator. This has been made for me by Messrs. Reynolds and Branson, of Leeds, and is here illustrated. The whole flow of gas and water in every direction is controlled by one tap with a pointer on an indicator showing what is taking place. Whenever the pointer is pointing to the word "closed" the needle in the patient's chest is only in communication with the manometer, and *all other openings* are shut off. The pressure attained in the chest can thus be read whenever desired during the operation, all hydrostatic pressure being eliminated. In this way one tap controls the apparatus, closing the needle during re-charging the gas bottles, or at any moment, and controlling immediate change from one gas to the other during the filling of the chest.

FIG. 1.

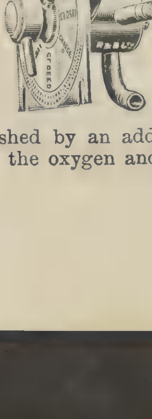


FIG. 2

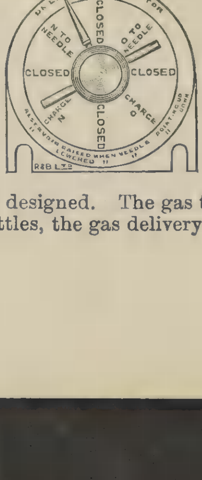


FIG. 3.

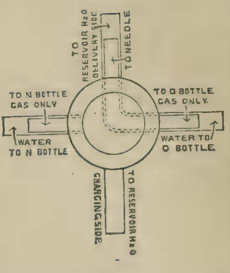
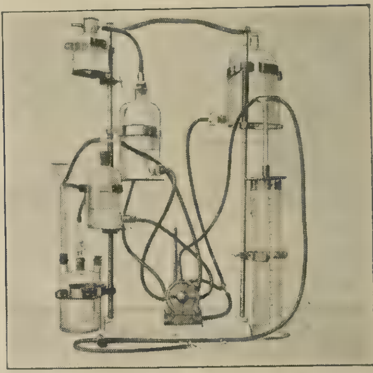


FIG. 4.

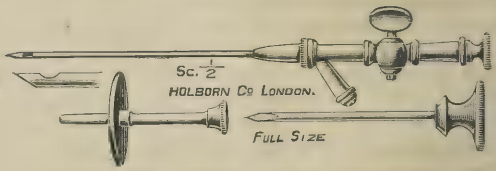


Regulator *in situ* applied to Dr. Lister's modification of Dr. de C. Woodcock's apparatus. This prepares its own oxygen as well as nitrogen. (Made by Messrs. Reynolds and Branson.)

This regulator it is hoped will prove an assistance in enabling the single-handed operator to devote his whole attention to watching the manometer which is in communication with the needle in the chest.

To diminish the risk of puncture of the lung to a minimum I have had made for me by the Holborn Surgical Instrument Company a semi-blunt needle of small calibre with a lateral aperture very close to its point. It is here illustrated. This needle is introduced through a little silver cannula guarded by a flat plate one-quarter of an inch from its end. This is introduced by means of a sharp trocar through the skin and superficial tissues in the intercostal space. The trocar is withdrawn, leaving the little cannula fixed in the superficial tissues. The hollow semi-blunt needle is then introduced through the cannula which it fits. Although it is impossible to guard absolutely against risk in the operation for producing artificial pneumothorax, yet simplification of *control* of the hydrostatic apparatus for the transfer of gas to the chest and the substitution of a semi-blunt needle introduced through a guarded cannula may help to prevent some accidents in the hands of those who do occasional operations, especially practitioners carrying out refills.

FIG. 5.



Harley-street, W. THOS. D. LISTER, M.D. Lond.

THE LANCET.

LONDON: SATURDAY, OCTOBER 3, 1914.

The Care of Our Wounded.

WE published last week a brief preliminary sketch of the way in which the care of the sick and wounded in war is organised and undertaken by the Royal Army Medical Corps. The scheme was laid down many years ago by Sir THOMAS LONGMORE and lends itself to various developments. As methods of transport and of intercommunication improve it can be adapted to all the modifications necessary, and the sick or wounded man can be maintained throughout the operations under the protection of medical care. From the firing line he is drawn into shelter; first aid having been rendered he is transported without delay to a clearing hospital where treatment suitable to his case can be more deliberately supplied; from the clearing hospital he is removed to a base hospital with all the promptitude which transport can provide. Nothing is wanting theoretically in the scheme, which is as sound to-day, when ambulance trains and motor lorries can be employed, as it was when the Crimean veteran drew it up. But in no department of war is it more difficult to ensure that practice shall follow theory than in the management of the sick and wounded, for circumstances may arise in the general conduct of affairs so disconcerting to all medico-military plans that temporary breakdown may become inevitable.

In a war like the one which is now raging, along enormous battle fronts, it is perfectly certain that, where each side is alternately advancing here and retreating there, the medical services of the Royal Army Medical Corps, supplemented by the St. John Ambulance Association and the British Red Cross, cannot always remain available for the sick and wounded in every stage between the front and the base. Plentiful information has reached us already how effectively the Royal Army Medical Corps have done their work, while the Casualty Lists sufficiently show with what devotion and with what personal risk this work has been done; but stories have also been published suggesting that in other places the wounded have failed to get adequate attention or transport. This is a matter upon which the public is rightly sensitive, so that we think it fair to point out how inevitable it is that any general scheme should find itself unable to cope in detail with all the circumstances that may arise over two hundred miles of desperate fighting. Let us look back at those terrible days which marked the arrival of our Expeditionary Force at the front. That Force was immediately compelled to make prompt retirements against overwhelming numbers, and was subjected on many occasions to heavy slaughter. It is obvious that the battle-fields upon which our wounded lay were immediately occupied by the enemy, that the places of retirement selected for dressing-stations could no longer be used, and that situations designed for clearing hospitals came early within the range of attack. In these circumstances the recognised routine for collecting the wounded and for sorting and "evacuating" them was thrown out of gear. The fact is so clear that it calls for no explanation, and the result so obvious that it need not be dwelt upon. All that a medico-military service could do in such circumstances was done. Every endeavour was made to collect as many wounded as possible, and, despite the personal risks incurred in the task, it was attempted to give first aid to those collected, and where possible to arrange for their transport to more permanent shelter. In such circumstances the accomplishment of any design depends practically upon the tide of the battle, upon the amount of transport available, and upon the attitude and demeanour of the enemy. In adverse circumstances no more than this can be done by the best organised service in the world, who may have to make the best of a terribly bad job. The medico-military service, at any rate in the advance part of its work, must share the fortunes of the army which it accompanies, and of which it is an integral part; and if the army has to give way to superior force, to retreat, and possibly to leave behind that which cannot keep pace with a retreat, the pre-arranged care of the wounded will become disorganised, and grievous agony and sad loss of life must follow.

We publish in another column interesting communications from Dr. JAMES DONELAN and Dr. KNOWSLEY SIBLEY which indicate that throughout the war the British and French armies have made every attempt to send cases from the field-dressing stations as rapidly as possible to the large base hospitals, which have been prepared in, among other places, Paris, Rouen, and Dieppe. Now base hospitals are arranged presumably in a place out of the sphere of the enemy's activities, and here the arrangements can be made with deliberation and can be thought out beforehand. Although they are of course dependent in a secondary manner on the course of the war, there should not be any reason to alter them from day to day or hour to hour. As long as the lines of communication are preserved the transport of the wounded by train, lorry, or, in some cases, water, should proceed systematically; the treatment at the hospitals should be scientific and thorough, the nursing and feeding arrangements should be ample, the arrangements for passing the convalescent patients out, so as to make room for new patients, should work well, the horrors of infection should be expected and dealt with. Failure in any of these respects at a base hospital must be explained, while a breakdown in the fighting line as a rule needs no apology. We have as yet heard but little of the working of the various base hospitals to which the patients have been finding their way, but that little has all been favourable as far as the hospitals have been concerned, though the railway transport has been poor and there has been a shortage of nurses. The absence of special correspondents, and the discreet silence enjoined upon all engaged in the war in any capacity, has caused us to depend largely for information upon the individual experiences of the sick or wounded who have returned from the front, and these experiences may entirely differ. One fortunate wounded man may be carried from the fighting line to immediate shelter, receive prompt first-aid, secure ready transport, and find himself in a base hospital in a comparatively few hours. He will be distinct in his praise of an organisation which has succeeded in his case so well. Within a mile or less of him circumstances might have made it completely impossible to clear the battlefield of wounded for many hours, and the story from such a scene would be very different. It is clear from the great activity that has been manifested recently in this direction that a shortage of nurses and ambulances has been recognised by the authorities, a situation which, we hope, is being promptly met.

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The Treatment of Streptococcal Infections.

THE morbid conditions produced by streptococci are so widespread and varied, and are frequently of such severe and dangerous character, that their effective treatment is a matter of the greatest practical importance. It must be confessed, however, that, in spite of laborious and carefully designed attempts to develop specific agents on the lines of other bacterio-therapeutic measures of proved efficacy to combat the streptococcus and its effects, these are in the main disappointing. This is more particularly the case in regard to the antistreptococcal sera, of which a considerable number have been prepared by different methods. Clinically these sera have been tried very widely, more especially in severe and generalised streptococcal infections. In some cases they appear to be useful, but in others they fail entirely. It was supposed that this might be due to the streptococcus used in preparing the antistreptococcal sera being of a different strain from that causing infection in the patient, consequently so-called polyvalent sera were prepared, many virulent strains of streptococci from different sources being used in their preparation. Although good reports have been obtained clinically from such sera, they have not fulfilled the expectations formed of them. We publish in this week's issue of THE LANCET an interesting paper by Dr. J. W. MCLEOD, in which the whole question of the value of antistreptococcal sera is critically discussed in the light of some experiments carried out with a streptococcus of high virulence for rabbits, and with a careful survey of the literature of the subject. It is a familiar clinical observation that recovery from many streptococcal infections does not confer any lasting degree of immunity upon the organism.

Dr. MCLEOD'S review of the scientific bacteriological analysis of antistreptococcal sera goes far to show that they can hardly be expected to be as efficacious as some of the well-known antitoxic and antibacterial sera for other organisms. It would appear that the actual antibodies present in antistreptococcal serum are very limited in character. That this serum has no bactericidal action has been demonstrated by numerous observers, and it is stated that virulent streptococci will grow in it. It has been supposed that some of the beneficial results which have been obtained with it are due to an anti-endotoxin, but there is no evidence of this, and many bacteriologists have shown that no antitoxin is present against the hæmolysin produced by the virulent strains of streptococci, which is closely associated, if not identical, with the actual endotoxin of the organism. Dr. MCLEOD states that three varieties of antibody have been found in antistreptococcal sera, of which two—viz., an amboceptor capable of absorbing complement and an agglutinin—are unimportant. The third antibody to which its chief protective power is attributed is an immune opsonin or bacteriotropin. Dr. MCLEOD comes to the conclusion that none of the antistreptococcal sera available for therapeutic purposes in man are likely to afford a supply of immune opsonin sufficient in quantity to alter the course of streptococcal infection in man. In his own experiments with rabbits he obtained slightly better results with normal heated horse serum than with antistreptococcal serum obtained from horses. It seems to us that these results, discouraging though they are, should not lead to the entire discarding of the procedure, still less to any slackening of the efforts to obtain a more potent variety of serum. It is generally admitted that these sera possess a high degree of protective power against streptococcal infections in mice, and therefore there are grounds for hoping that eventually some modification may be found in the mode of preparation which may render them more efficacious in man. Dr. MCLEOD is, however, of opinion that a more hopeful line of research is to try to find some artificial antibody to streptococcal toxin. Since it would seem that the attempts to induce passive immunity in man to streptococcal infections by means of sera have so far been disappointing, it is satisfactory to find that the experience with streptococcal vaccines is more encouraging, although this is difficult to reconcile with Dr. MCLEOD'S statement that cultures of streptococci killed by heat are of no value for immunising.

In the *Times* of Sept. 28th Sir ALMROTH WRIGHT, in the course of a plea for compulsory inoculation of the troops against typhoid fever, suggests that an antisepsis vaccine—i.e., a mixed streptococcus and staphylococcus vaccine—should be used as a prophylactic against the septic infection of wounds. He states that it is beyond controversy that these vaccines, if employed in time, almost invariably prevent and abort the corresponding septic infections. Autogenous and stock streptococcal vaccines have now been widely used in subacute and chronic infections with these organisms, and certainly with beneficial results, more especially in the cause of autogenous vaccines. With acute and generalised infections they obviously require to be given with great care and discrimination, but even here good results are on record.

Annotations.

"Ne quid nimis."

THE IDEAL PRACTITIONER.

THE attempt to portray a concrete embodiment of the ideal is always a fascinating pursuit. The portrait of the ideal medical practitioner has been essayed over and over again with greater or less success, and will doubtless continue to be drawn as long as medical practitioners shall exist. A recent felicitous effort in this direction is the inaugural address this year at the London (Royal Free Hospital) School of Medicine for Women, delivered by Miss Frances Ivens, honorary medical officer for diseases of women at the Liverpool Stanley Hospital. Naturally Miss Ivens laid particular stress on the special opportunities for the woman doctor. She expressed her conviction, one in which we agree with her, that before long there will be a decided public opinion that it is not right for an able-bodied young woman, in whatever station of life, to eat the bread of idleness or to allow her brains to atrophy for lack of use. The idea that a "gentleman" should be a person of "no occupation" has only of recent decades begun to die out, but already a healthy contempt for that idea is making itself generally felt. Public opinion is now beginning seriously to address itself to the question of a wider field of activity for women than our forefathers thought desirable or fitting. Miss Ivens enforces this teaching with a thought which the present European crisis must have brought to our minds forcibly, when she says that, "With the startling changes of fortune incidental to a great war, it will come home to many parents that a definite training is a much better insurance for a daughter than a monetary provision, which may be swept away in a financial crisis." Most of her suggestions are as sound and practical for the male medical student as for the female. We quite agree that it is useful to have prepared a definite plan of the use to which the student is intending to put her (or his) professional knowledge, however circumstances may vary it later. With such a plan concentration and coördination in study are more effectively maintained, while if circumstances do subsequently turn up which lead to a change of plan they will probably result from a later discovered special aptitude, which rightly cultivated will ensure success. That there is a field for the woman general practitioner has been unmistakably demonstrated by the revelation, through the operation of the Insurance Act, of a serious amount of special morbidity among the women of the poorer class. The results of this have been seen and faithfully dealt with to the best of their powers by medical men in general practice and on hospital staffs. But to the woman general practitioner in the nature of things will fall greater opportunities of preventing these morbid processes, or at least of recognising and arresting them before they have time to bring about the results that call for correction. Miss Ivens rightly lays stress on the importance of the gift of imagination, not only to glorify the common task, the daily round, but still more to enable the fortunate possessor to appreciate the position of others and so to realise the facts of life. Thus is acquired the invaluable gift of understanding, whereon depends the recognition of the human factor—the x of the biological equations of medicine. The possession of this quality not only helps in the conferring of the greatest good on the greatest number, but even, like mercy, it is twice blest—it blesseth him who understands as well as him who is understood. In no career, also, has the sense of humour a greater value than in medicine if rightly restrained. It is the oil that makes the machine run smoothly and with the least possible wear and tear from friction. Both these qualities play an important part, as Miss Ivens points out, in the composition of the ideal practitioner.

THE RÔLE OF TOBACCO IN THE WAR.

WE may surely brush aside much prejudice against the use of tobacco when we consider what a source of comfort it is to the sailor and soldier engaged in a nerve-racking campaign. With us at home it is a common experience that the smoking of a pipe, cigarette, or cigar does much to allay the restlessness and muscular irritability engendered by mental and physical fatigue. There can, indeed, be little doubt that tobacco fills an important place in the psycho-physiological affairs of the human race, and that the habit of smoking (which does not include over-indulgence and self-poisoning) does something to temper the intensity of the struggle. There are exceptions, of course, but smoking is a custom which has widely prevailed amongst men distinguished by their soundness of judgment and by their success in the worlds of art, science, and literature—men who have played a great part in solving the problems of existence in its many difficult details. Huxley once confessed that amongst his fellow students at the hospital he was exposed to considerable temptations to smoke, but on his essaying to acquire the habit he soon found himself on th floor. He gave it up for 40 years. On the occasion of a tour in Brittany, however, he found on a very wet and cold day a companion who looked so happy with his cigar before the warm fire within the inn that he thought he would try to smoke again. "And then I found myself a changed man. I found that I was in the position of a lamentable 'pervert,' although the person who led me astray was most distinguished and a late president of the British Association. From that day I date my ruin. For, from that day, whenever smoking is going on, you may be pretty sure that I join in it." To the soldier and the sailor in the present war, with his nervous system in a ceaseless state of tension from the dangers and excitement, tobacco must be a real solace and joy when he can find time for this well-earned indulgence. Abuse of the habit is, of course, pernicious, but to quote Huxley again: "Anyone could undertake to destroy himself with green tea or any other article of diet if carried to excess." The risk, at any rate, is as nothing compared with an abuse of alcohol. The hope is thoroughly justified that the soldier in the present campaign will be generously supplied with this indisputable creature comfort.

RADIUM IN THE TREATMENT OF UTERINE HÆMORRHAGE AND FIBROID TUMOURS.

IN the *Journal of the American Medical Association* of August 22nd is published an important paper on Radium in the Treatment of Uterine Hæmorrhage and Fibroid Tumours, which was read at the recent annual meeting of the association by Dr. Howard A. Kelly and Dr. C. F. Burnham. They point out that until recently the control of uterine hæmorrhage and the relief of pressure symptoms due to fibroid tumours was possible with certainty only by radical operations. In four groups of cases they have found radium treatment effective. The first group consists of cases of marked menorrhagia or metrorrhagia in adults with no disease of the pelvic organs except perhaps slight enlargement of the body of the uterus. The endometrium is microscopically normal. There were eight cases, and all the patients were suffering from anæmia, which had not yielded to palliative measures. Their ages varied from 27 to 44 years. Intra-uterine exposures of from 2 to 24 hours to radium in quantities varying from 60 to 268 milligrammes were given. In two cases the bleeding never recurred after the first exposure. In one case a second exposure was necessary. In the remaining five cases a normal period followed and was succeeded by complete amenorrhœa. Mild menopausal symptoms occurred in three cases, marked menopausal symptoms in one case, and no symptoms in four cases. All the patients finally reported themselves in good health. The second group includes most of the hæmorrhages which occur in young girls. In many the local condition is the same as in the first group, but in some it is similar to that in the third group (polypoid endometrium). There were five cases. In addition to the usual medicinal treatment all but one of the patients had been curetted. The amount of radium used varied from 12 to 60 milligrammes and the time of exposure from 5 to 24 hours. In three cases menstruation became normal; in one case amenorrhœa for two months was followed by menstruation, which was not excessive; and in the remaining case (where radium was applied through the abdominal wall) complete amenorrhœa with menopausal symptoms occurred. In the third group there were uterine hæmorrhages with polypoid growth of the endometrium. There were five cases. The amount of radium used varied from 30 to 100 milligrammes and the duration of treatment from 7 to 22 hours. With one exception all the patients were relieved at once by a single application. They were all anæmic and had resisted other forms of treatment. The fourth group consists of cases of fibroid tumours causing hæmorrhage or pressure symptoms. There were 21 cases. The amount of radium used varied from 30 to 560 milligrammes and the time from one and a half to 48 hours. In 16 complete amenorrhœa was induced. The tumours greatly diminished and in two cases disappeared. In these latter menstruation persisted. As to the mode of action of radium, it has been shown that the penetrating rays, like the X rays, destroy the primordial follicles of the ovaries, which determine menstruation. Hence most operators have endeavoured to concentrate the rays on the ovaries. Dr. Kelly and Dr. Burnham controvert this view that the beneficial effects of radium are produced on the uterus through the ovaries and believe that its action is direct. They point out that many fibroids grow after the menopause, and that in the two cases mentioned above the fibroid disappeared although menstruation persisted. They attribute the effect of radium to obliterative endo-arteritis, which is well known to occur almost invariably in the field of radiation. Their technique is as follows. The radium rays are filtered through glass, 0·5 mm. of platinum, 0·5 mm. of zinc foil, and 0·3 mm. of rubber. The apparatus, suitably shaped, is carefully introduced into the uterus. Cervical applications are less reliable. Before introducing the radium the patient is anæsthetised with nitrous oxide, thoroughly curetted, and examined carefully. In using the radium their plan is steadily to increase the amount while decreasing the time. Sometimes they reinforce the intra-uterine applications by abdominal radiation either with radium or the X rays.

THE ELECTROLYTIC BATH AND LEAD POISONING.

THE possibility of removing lead from the body by electrolysis in cases of plumbism is evidently not proven. In the papers which appear in our present issue Mr. Kenneth Goadby and Mr. W. H. F. Oxley both arrive at the conclusion that lead in demonstrable quantity cannot be removed by electrolysis from lead-bearing tissues under the usual conditions of the electrolytic baths recommended by Sir Thomas Oliver. These conclusions are supported by experiment and by argument. The experiments both upon animals and human beings were uniformly negative. The arguments are as follows. In the first place the movement of the lead ions is so slow that in the course of an application lasting for half an hour or even an hour any lead which lies at a distance from the surface of the body of one centimetre would not have time to reach the skin nor to reach the water of the bath nor the electrodes. In the second place, the proportion of lead ions to general tissue ions is so very small that almost the whole current would be conveyed by the latter, and the lead ions would be concerned only to such a minute extent in the conduction of the electricity that the weight of lead set in movement would be excessively small and could not be detected by chemical analysis. Thirdly, it appears that the lead in the tissues exists in a combination which keeps it out of action, so that it does not readily behave as an ion. This would be the case if it were in insoluble combination with the albumins of the body. An objection to this argument is that if the lead were truly insoluble it should be inert and unable to give rise to symptoms. But it may be the case that the lead is for the most part insoluble, and that the toxic symptoms are due to very small amounts of the metal which slowly pass from the insoluble into the soluble form. An interesting point comes out in one of Mr. Goadby's experiments—viz., the appearance of a lead deposit at the anode of the cell. Though this might be thought odd, it is not unusual. Lead may appear at either pole of an electrolytic cell. At the kathode it is deposited as metallic lead, but under certain conditions it may appear at the anode in the form of lead peroxide.

DISPOSAL OF EXCRETA IN CAMP AND ON FIELD SERVICE.

THE question of camp sanitation is of great importance at the present time, when all over the country bodies of men are collected together for the purposes of military training, being accommodated generally either under canvas or in buildings temporarily used for the purpose, and not provided with the ordinary arrangements for removal and disposal of excreta. Under these circumstances, temporary expedients are generally adopted, more or less unsatisfactory, unless considerable outlay is incurred on laying out land for sewage treatment or on a drainage system for removal to a distance. By the joint investigations and inventiveness of Dr. Myer Coplans and Mr. James Menzies a method has been evolved which appears to satisfy requirements effectually and economically. The apparatus consists of: (1) a partitioned chamber for reception of excreta; (2) a condenser; and (3) a receptable for the condensed products. The tank into which the excreta (mixed fæces and urine) are introduced is cylindrical in shape and divided into several sections by horizontal partitions. The sewage is poured in at the top through a hopper and broken up by a revolving comb; it passes on from above downwards through the successive partitions, being exposed all the time to a high temperature. As a result there ensues complete disintegration. The solid residue comes out at the bottom carbonised into charcoal; the volatilised products are led through a condenser and received into a chamber, where they settle out into (1) a heavy ammoniacal liquor, (2) a layer of oil, and (3) gaseous products. These last are piped off to a burner, where their combustion provides the heat required to produce the disintegrating action on the sewage that takes place in the partitioned chamber. The ammoniacal liquor forming the lowest layer in the receiver contains pyridine bases, which are of value as an insecticide (against flies, &c.) and as a bactericide (against B. typhosus, &c.). The layer of oil is collected and used as fluid for working the motor that actuates the revolving comb or scraper in the cylinder first mentioned. The solid carbonised residue is practically pure carbon, which may be used as fuel or for many other purposes. In this method of treatment it appears that by means of an ingenious practical application of scientific principles, long known, but not hitherto utilised so completely or so successfully as in the apparatus under consideration, Mr. Menzies and Dr. Coplans have not only been successful in showing how much value lies in the excretory products (a fact often logically proved before now), but have also demonstrated that these products may be rendered innocuous and disposed of at a very minimum of cost, or even at no cost at all; it is quite possible that the residual charcoal may come to be a source of profit. At any rate, it seems proved that the working expenses are covered—that is, that the installation pays for itself. The fact of the apparatus being self-contained and self-supporting —viz.: (1) that the heat required for the destructive distillation of the excreta is provided by the gas which is set free; and (2) that the petroleum oil for running the motor is also obtained from the results of the same distillation—distinguishes it from all other chemical processes or methods of disinfection depending on heat. It is stated that no fuel is required at all beyond lighting up at the commencement of working. That an insecticide and bactericide should be obtainable from the condensation liquor is also much in favour of this method, if in practice it can be recovered without difficulty. In camp life such a substance would be most useful for the destruction of flies, fleas, and vermin generally, as well as for its more important disinfectant applications to contagious pathogenic material. The apparatus is installed at the Wimbledon sewage works, where it is in full working order, and, we understand, is shortly to be brought into practical application on a large scale by the War Office.

THE MEDICAL SOCIETY OF LONDON.

THE 142nd session of the Medical Society of London will open on Monday evening, Oct. 12th, when the annual general meeting will be held at 8 o'clock, and the incoming President, Sir John Bland-Sutton, will deliver his introductory address at 8.30. The Lettsomian lectures for 1915 will be delivered by Mr. Arthur E. Barker on Feb. 1st and 15th and March 1st; the anniversary dinner will take place on March 10th; and the annual oration will be delivered by Sir William Osler on May 17th. The joint honorary secretaries for the ensuing session are Mr. George E. Gask and Dr. Herbert French. The first discussion will be held on Oct. 26th, and the subject chosen is the operative treatment of tumours of the cæcum and colon, especially in relation to immediate resection, colostomy combined with secondary resection, and short circuiting. The openers will be Mr. H. J. Waring, Mr. James Sherren, and Mr. Lawrie McGavin. The subject of the discussion on Nov. 23rd is tumours of the pituitary body.

MENTAL DISEASES IN SWITZERLAND.

OUR special correspondent in Zürich draws attention to a statistical treatise on mental disease in Switzerland which has just been published by Dr. A. Koller, resident physician in the Cantonal Asylum at Herisau. As there is no official registration of mental cases in Switzerland, Dr. Koller collected the number of cases admitted in all the public asylums of Switzerland, 30 in number, and the rapid increase of mental disease is visible from the following figures :—

Date.	Number of patients.	Percentage of total population.
1875	2983	1·09
1885	3909	1·36
1895	5669	1·82
1900	7099	2·14
1910	9366	2·51

In 1910 probably 700–800 patients were in private asylums, and doubtlessly double that number in families, but exact data were not obtainable. The number of patients in asylums has, it appears, more than trebled in 35 years, whilst the increase of population was only about 40 per cent. Mentally deficient children and epileptics are not included in these statistics. It is noteworthy that in 1845, as far as figures are available, there seem to have been only 600 mental patients in Switzerland, equivalent to 0·2 per cent. of the population, but neither the figures nor the diagnoses can be worth much.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: MUSEUM DEMONSTRATIONS.

A SERIES of demonstrations of specimens in the Museum of the Royal College of Surgeons of England will shortly be given. The demonstrations are intended for advanced students and medical practitioners, and will take place in the theatre of the College in Lincoln's Inn-fields. The dates and subjects of the demonstrations are as follows: Friday, Oct. 16th, Professor Arthur Keith, Specimens illustrating Gunshot Injuries of the Head—Ancient and Modern. Monday, Oct. 19th, Mr. S. G. Shattock, Specimens illustrating Carcinoma. Wednesday, Oct. 21st, Mr. J. F. Colyer, Specimens of Injuries to the Jaws and Teeth of Animals. Friday, Oct. 23rd, Professor Keith, Specimens illustrating Gunshot Injuries of the Limbs. Monday, Oct. 26th, Mr. Shattock, Specimens illustrating Tuberculosis. Wednesday, Oct. 28th, Mr. Colyer, Specimens of Dento-alveolar Abscess and Dental Cyst. Friday, Oct. 30th, Professor Keith, Gunshot Injuries of the Thorax and Abdomen. Monday, Nov. 2nd, Mr. Shattock, Specimens illustrating Repair. Professor Keith and Mr. Shattock will demonstrate at 5 P.M. each day and Mr. Colyer at 5.30 P.M.

TESTICLE TRANSPLANTATION FROM THE DEAD TO LIVING BODY.

A MOST striking therapeutic procedure which apparently has met with remarkable success is reported in the *New York Medical Journal* (1914, c., 67) by Dr. G. Frank Lydston. It consisted, briefly, in the transplantation of a testicle from a man who had recently died into the scrotum of a second individual. The object of this proceeding was to try to effect relief for extensive psoriasis; the result was certainly beneficial. The writer is of opinion "that perversion of nutrition, primarily due, perhaps, to an aberration of quality and quantity of internal secretion—of the sex or other glands—underlay skin lesions of the class in question." His ideas, as foreshadowed in this paper, also extend to advocating the value of gland implantation to other conditions, such as diabetes, tuberculosis, and even carcinoma. The immediate case referred to here is that of a man aged 53, a hard drinker and gourmand; no syphilis; a history of two tappings for ascites six years previously, when he was supposed to have cirrhosis of the liver. His present condition showed a large and hard liver, and much ascites which was successfully tapped and six gallons of fluid removed. There was present also some evidence of a tumour mass in the abdomen. As regards the psoriasis, it extended on the back of the arms and forearms, the front of the right leg, the buttocks, the lumbar region, and the back. The patches were large and the patient had had them for many years. The operation consisted in the transplantation of a testicle—with the epididymis excised—removed from an apparently healthy subject about 21 years of age, dead 30 hours before from contact with a live wire. Operation was performed 10 hours after removal of the testis—that is, 40 hours afte death. The post-operative course was uneventfu On the third day after the implantation improvement was noted in the psoriasis, and eight days after the operation the lesions were so improved that they could scarcely be recognised as psoriasis. Betterment of the general condition of the patient also followed, though there was some evidence of a further accumulation of fluid.

THE National Health Insurance Commission have issued a Memorandum to Insurance Committees on the terms and conditions of medical service for next year, altering the arrangements for medical certificates and the dates for the revision of doctors' and chemists' agreements.

AMBULANCE WORK IN FRANCE.

BY JAMES DONELAN, M.CH., M.B. R.U.I.,

CHEVALIER OF THE CROWN OF ITALY; SURGEON TO THE THROAT DEPARTMENT OF THE ITALIAN HOSPITAL, LONDON.

IN accordance with the invitation of the Editor of THE LANCET I send the following notes of such observations as I have had an opportunity of making during my recent visit to some of the ambulances in the western portion of the seat of war in France. I should like to point out most distinctly that the ambulances I visited or in which I did some surgical work were only those in relation to the French army. The only British soldiers I came into contact with were a small party who had lost their way, one of whom had a bullet wound in the scalp, and some of our Army Service Corps who brought a comrade to the ambulance of which I had temporary charge at Crépy-en-Valois. This man had fallen under a train, and his left forearm and arm were so crushed that I had to amputate near the shoulder. In view of the naturally great interest in the arrangement for our own wounded I have requested a surgical colleague now in France to visit the line of country through which they are being sent down.[1]

Arrangements for Dealing with the Wounded.

Any consideration of the ambulance arrangements must keep in view three factors: the gigantic nature of the conflict, the unprecedentedly large numbers of wounded, and the small opportunities of picking up the more severe cases beyond the trenches unless a decided advance has been gained. To some extent German firing on Red Cross workers and flags of truce for collection of wounded has also prevented the immediate assistance hoped for in a war between civilised armies.

Though the large majority of those who reach such base hospitals as Dieppe have bullet wounds of soft parts from which they as a rule rapidly recover, there is a good number of cases of wounds of cavities which have taken a serious turn since their arrival. During my journey up in the first train taking back refugees from the districts immediately south of the Aisne we had a very long halt while strengthening a trestle bridge that had been placed instead of one destroyed by the retreating enemy. No less than five long trains full of wounded French and one British passed us. There must have been between five and six thousand in all. The vast majority could be seen sitting up; many were looking out of the windows and waved their hands to us. On the other hand, the impression must be guarded against that this represents anything like the real picture. Owing to the desperate character of most of the fighting, its continuance, and the fact that commanders have had to check the excessive zeal of the medical services in the interests of the rest of the army, I am assured that a man severely wounded, as by shell fire, in the early part of the day has a very poor chance of being picked up outside the trenches before evening unless some advance is made or some lull takes place in the firing. This accounts to a large extent for the comparatively slight character of the wounds of the majority of those who reach the base hospitals.

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[1] We hope to publish a report from the well-known surgeon here indicated, but the vagaries of the French mails forbid any promise.—ED. L.

The method followed by both the British and the French armies is to send all cases that appear to be able to bear the journey from the field dressing stations as rapidly as possible to the large hospitals in Paris, Rouen, and other cities. Those who prove unable to bear the journey in the train are discharged on the way where there happens to be a hospital. At a station on the way to Crépy I was shown a building in which were the bodies of three French soldiers who had died in the train. The more severely injured are, as far as possible, sent by motor ambulances to the nearer collecting hospitals or even to Paris if it appears practicable.

The Nature of the Injuries.

A reference to some injuries I have seen may be of interest. Most of them were bullet wounds. The orifice of entry of the German bullet just admits an ordinary cedar pencil, and in soft parts that of exit is hardly larger. Where the missile has been deflected by bone or other dense tissue it may continue its course sideways, causing much destruction. Since my return my attention has been called to the remarks of Mr. Selous on this subject, and I am inclined to reconsider my view of the case at Crépy mentioned by me in last week's issue. It is quite possible that even a non-expanding bullet deflected from its course may have caused the destruction of the right side of the face there described. Unless expanding bullets are actually found in relation to such wounds, in view of Mr. Selous's remarks their use must be regarded as not proven. I do not think the German authorities systematically issue dum-dums, though there is ground for believing that individual soldiers, or even small parties of them, may sometimes convert ordinary bullets into expanding ones by suitable filing. I was also shown some skiagrams in which bullets had extensively splintered long bones, finally lodging in the articulations of hip and shoulder. In one the opposite course was taken. Entering the front of the femur it had run down the hollow of the bone, finally lodging in the tibia. Another showed a shrapnell ball fixed between the tibia and the femur.

One patient was shot immediately below the left auditory meatus, the missile knocking out the opposite upper canine and bicuspid. When one thinks of the relations to its course it is remarkable that he was discharged convalescent on the fourteenth day. The more serious bullet wounds were those in which there was splintering of long bones, and injuries to head, chest, or abdomen. A German prisoner under my care had been shot from behind, it was said by his own officer, the bullet passing under the scalp and ploughing the right parietal bone for about an inch. The inner table did not appear to be injured and he did very well for about a week, but just before I left he had developed encephalitis.

As might be expected in an old agricultural country, tetanus is very rife. I should not like to mention the proportion in the cases I saw as there were not sufficient to form a general estimate. The proportion is, I am assured, very high, especially in cases of shell wounds of the lower extremities. Antitetanic serum is extensively used, but, as might be expected, has little influence in developed cases, and its use as a prophylactic remains yet to be more conclusively established. I had another German patient who died from tetanus on the fifteenth or seventeenth day after being hit; he underwent amputation below the knee, and secondary amputation for spreading gangrene at mid-thigh. He was one of the German prisoners whom their own surgeon did not visit on the occasion when he came to report on the wounds of the British and French prisoners during the German occupation.

On the whole the general impression I received was that though surgeons were much needed a week or two ago in some of the stations near the front the arrangements on the whole were admirable, and everyone was doing his and her duty with the utmost zeal and self-sacrifice. People whose ideas of war and ambulance work are derived from witnessing mock combats at Olympia and elsewhere should not be at all ready to criticise the real thing, when enacted on the most gigantic scale and under the most terrible circumstances in the history of the world.

DIEPPE AS A MILITARY HOSPITAL BASE.

BY W. KNOWSLEY SIBLEY, M.A., M.D. CANTAB.

THE following notes founded on a recent visit to Dieppe may prove of interest to readers of THE LANCET at the present time.

The French military medical authorities have placed as many of their base hospitals on the sea coast as possible, the opinion being that the fresh air of the seaside, together with the comparative absence of flies and mosquitoes, puts the wounded under the most favourable circumstances for their recovery.

The delightful French watering place, Dieppe—so well known to many English people who appreciate the beauties of the coast of Normandy, and usually so gay and full of life—has been completely transformed into one huge base hospital for the wounded soldiers, French, German, and a few English. The Casino, the College, and nearly all the large hotels no longer cater for the pleasures and luxuries of the rich, but are full of the wounded, and bear testimony to man's marvellous inventions for the destruction of the lives and limbs of his fellow creatures.

The French military surgeon in command of all the Government Hospitals in Dieppe is Major Doctor Gauillard, of Rouen, who is attached to the 12th Chasseurs, and I had the honour of accompanying him round the largest of his hospitals on Sunday last.

The College and all the large hotels on the sea front, such as the Grand, the Métropole, the Paris, and the Beau Rivage, have been hurriedly transformed into hospitals, and contain between them some 1200 wounded, and many more are expected.

Fever cases are sent to the Dieppe Hospital. Some two or three weeks ago there was a panic in Dieppe, as the Germans were expected to enter the town, which is a "ville ouverte." At 1 o'clock at night Dr. Gauillard received instructions from headquarters to remove the whole of his wounded and the hospital equipment immediately by rail to Havre. Before morning they were all, some 400 in number, on the train. On arrival at Havre they received word to cross the Seine to Trouville, and on arrival there they were sent on to Deauville, where the Casino was rapidly prepared for their reception.

At the moment the largest number of cases are in the Collège de Dieppe, where some 250 beds are installed, 40 being occupied by wounded Germans, whose condition is much less favourable than that of our allies, as they have all been left much longer on the battlefield, and apart from their wounds, which are more severe, they are very dirty when first received into hospital. Ordinary bullet wounds, unless they have penetrated some vital organ, are not usually very serious; even if they have struck bone they generally pass right through and but rarely produce a fracture. Wounds by shrapnel, on the other hand, nearly always suppurate, because some piece of clothing has been carried in with them.

Chloroform is only administered for major operations, and the probing and cutting down for the extraction of bullets is performed under the very partial anæsthesia of eucaine and adrenalin. Fresh batches of wounded arrive by train, always in the middle of the night. The surgeons go round from bed to bed, an *infirmière* carrying a bowl to receive the bullets as they are removed, and the monotonous click of lead falling into the bowl continues until this receptacle is filled, when another takes its place.

An interesting case was that of a man who had received a bullet in the side of his nose, and a skiagram showed it to be lying just above the inner end of the clavicle. Another was that of a young man who some ten days previously had received a shock from a bursting shell which had killed his comrade but had not touched him; there was not even a bruise to be found on any part of his head or body, but he had completely lost his memory and speech, and was in a condition of amentia. I saw one marked case of tetanus and two suspicious ones, and three cases of septic pneumonia. It was suggested that the tetanus was conveyed from the straw on which so many of the wounded are placed as they are being removed to the hospitals. The mortality among the wounded has not been very heavy, and so far there has been almost a complete absence of general illness among the French troops.

The College and all the larger of the hotels are under the military, the Casino and some others under the Croix Rouge, where la Baronne de la Borgue-Noguez superintends the nursing.

At the Casino the concert hall and ball-room have been transformed into wards, so also have the adjacent reception-rooms. Here at the time of our visit the majority of the cases were sitting in the Restaurant de Casino enjoying an excellent *déjeuner*. The beds of those who were unable to be up had been carried into the gardens and placed by the tennis courts, with temporary awning adjusted over the heads of the beds as a protection against the sun's rays. This building makes an excellent summer hospital, but as there are no means of heating, it is difficult to see what will happen in the winter months.

Each hospital has a surgeon appointed in charge, and the nursing is performed by *infirmières*, who are chiefly ladies living in the chalets about who have volunteered their services and do what they can for the poor soldiers. A few are capable women who have had some nursing experience, and at the moment there are two English ladies who are fully trained nurses, the one at Pourville and the other at the Grand Hotel, Dieppe, but the majority are absolutely untrained and inexperienced. They nearly all live in their own residences, and go to the wards in the morning, leaving in the evening. Thus at night the hospitals are left to take care of themselves, of which state of affairs the less said the better.

A few trained English nurses, who can speak French, would be of great assistance in Dieppe at the present time, and would be gladly welcomed by the authorities.

I must thank Dr. Gauillard for his kindness and courtesy and the trouble he took in showing and explaining everything to me, and also among his assistants my special thanks are due to Dr. Dupont, of the Métropole; Dr. Toutbon and Dr. Carro, of the College; Dr. Thivet, of Pourville; Dr. Tripier, of the Plage; Dr. Circin, of Beau-Rivage; and Dr. David.

Sept. 29th, 1914.

THE CLAIMS OF BRITISH SPAS.

(Continued from p. 804.)

II.—BUXTON.

THE facilities for hydropathic treatment at Buxton have been considerably increased during recent years. The waters at this beautifully situated health resort fall clearly into a group of well-known therapeutic reputation abroad. To begin with, they are thermal, the temperature (82° F.) being an agreeable one for immediate use, and next as regards actual chemical composition, the total mineral constituents are 27·32 grains per gallon, the chief being the carbonates of calcium and magnesium (20 grains per gallon) and common salt. The water gives off a quantity of gas, consisting of nitrogen, helium, argon, and other rare gases, the presence of which, coupled with the natural heat of the water, commonly connotes radio-activity. These observed facts mean that in Buxton water we have a counterpart of the waters of Wildbad, Schlangenbad, and Gastein which can claim no further attributes.

Considerable attention has been directed in recent years to the radio-activity of the Buxton thermal waters, and it has been found that the amount of radium expressed in millionths of a milligramme in radio-active equilibrium with the emanation actually present per litre of gas or water is in the former case 10·9 and in the latter 1·2. It is pointed out that the waters of Buxton and Bath at the time of emerging from their source contain radium emanation to the extent of 1·2 and 1·7 respectively, and that in spite of the fact that the continental waters (e.g., Gastein and Plombières) show much higher figures there is no evidence that these possess a greater therapeutic value. Radio-activity alone would appear, therefore, not to offer a complete explanation of therapeutic value, for the doubt is expressed whether any spa in the world can show such a record of successful treatment as is contained in the official records of the Devonshire Hospital and the Buxton Bath Charity. Possibly the degree of ionisation of the saline constituents is much greater in the presence of emanation. Considerable value is now being attached to the action of calcium in metabolic processes, and the presence of this element in an ionised form may account for the therapeutic superiority of Buxton water over, say, that of Gastein, which is much more strongly radio-active, but which contains no minerals to speak of at all.

The hydropathic equipment at Buxton is very complete, balneological, electrical, and accessory, and no less than 87 methods of treatment are available. The following is an epitome of the diseases which are benefited by treatment at Buxton according to the experience of the medical practitioners there.

In gout the baths and waters are largely and successfully used in the treatment of this disease, and are generally applicable to its diversified manifestations as well as to affections depending upon uric acid diathesis. Skin diseases of gouty origin, and especially gouty eczema, are benefited by both internal and external treatment.

In articular and muscular affections, whether the result of rheumatic fever or gradually supervening on exposure to cold or damp, the baths and waters are beneficial. In recent and subacute stages the treatment must be gentle and tentative; in chronic conditions more vigorous and stimulating applications are required. Osteo-arthritis and rheumatoid arthritis are often relieved, and the disease may become stationary or retarded under a judicious course of balneotherapy combined with the climatic advantages of the place, while many cases of septic arthritis are permanently benefited. The chronic forms and later stages are often improved to a considerable degree, and stiff joints rendered more supple and free from pain.

Glycosuria and early diabetes are said to benefit greatly by the use of Buxton water. Complete disappearance of sugar is often observed as the result of treatment, especially in cases of gouty origin.

For the relief of high arterial tension the Bourbon-Lancy treatment and the radio-oxygen baths are especially designed, but observations made upon a large number of cases have shown that a course of drinking the water, of bathing, and especially of douche massage baths, results in a very marked fall of tension when this is unduly high.

Patients suffering from the early stages of arteriosclerosis do well under an annual treatment at Buxton owing again to elimination of toxins, the general treatment helping to maintain the elasticity of the blood-vessels. Some diseases of the nervous system, and especially those of a functional character, derive great benefit from Buxton methods. Tropical and subtropical diseases in their later stages and malarial conditions are also improved by baths and climatic treatment.

In heart diseases associated with gout or rheumatism the administration of the baths requires caution and experience. There are favourable conditions for treatment of these diseases by the Nauheim effervescent bath, and a large number of patients undergo this treatment with excellent results. Digestive disorders are often benefited by the stimulating effect of the baths and climate. The fact remains whether we subscribe or no to the explanation that the radio-active water helps these cases by increasing ferment activity. In colitis the Plombières douche is given with great success.

Lastly, anæmia when supervening on some acute condition, or the result of some rheumatic affection, yields well under treatment, and generally speaking the Buxton treatment, in which climate is an important factor, is adapted to conditions of weakness attending chronic disease.

In regard to contra-indications the waters and baths are not recommended when there is advanced heart or advanced kidney disease, but there can be no absolute rule for individual cases, and the extent or restrictions of the employment of the baths and waters can be best determined by those familiar with their actions and uses.

Buxton enjoys a bracing atmosphere, the town being on the highest urban site in England, at an altitude of 1000 feet above sea level. There can be little doubt that healthy climatic conditions are an important adjunct to hydropathic measures, and the success of Buxton as a balneotherapeutic station has probably depended largely upon a lucky partnership of healing air with healing waters. The surrounding scenery of the Peak is notorious for beauty, while as to amusements and recreations the history of Buxton as a leading watering place has been long, and those responsible have learned that social attractions which usefully divert from hydropathic régime will contribute in no small degree to the patient's convalescence.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Surgeon: L. C. Rowan-Robinson to the *Victory*, additional. Temporary Surgeons: H. R. Phillips to the *Soudan* (Hospital Ship I.); B. J. Brewitt to the *Pembroke*, for R.N. Barracks; T. Beaton to the *Mars*; C. H. Masson, M. H. de J. Harper, R. H. Knowles, A. D. E. Bayliss, and T. Norman, all to the *Pembroke*, additional; F. G. L. Scott to the *Wildfire*, additional; A. F. Adamson and T. R. G. Melrose, both to the *Victory*; R. W. Townley and P. M. Grundy, both to the *Vivid*, all for disposal; E. F. Fisher, L. R. Warburton, H. J. McCaw, and H. G. Parker, all to the *Vivid*, additional, for Plymouth Hospital, additional; T. S. Bradburn, and W. R. E. Unthank and E. M. Thomson, both to the *Victory*, additional, for Haslar Hospital.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon James Keogh Murphy to be Staff-Surgeon (dated Sept. 25th, 1914.

ARMY MEDICAL SERVICE.

Colonel George F. A. Harris, C.S.I., is appointed an Honorary Surgeon to the King, vice Surgeon-General A. M. Crofts, C.I.E. (dated May 25th, 1914).

ROYAL ARMY MEDICAL CORPS.

Major John D. Alexander to be Lieutenant-Colonel (dated August 31st, 1914).

The undermentioned have been granted the temporary rank of Lieutenant:—John Frederick Gill, Edgar Ashby, Ernest Edward Scott Joseph Galbraith, William Thomas Hessel, Thomas Harold Pettit, James Bruce Anderson, Frederick William Robinson, Arthur Theodore Todd, Thomas Edmund Ashdown Carr, George Samuel Sims, James George Blyth Coleman, and Frank Whitby (dated August 5th, 1914). George Alfred Gates (dated Sept. 12th, 1914). Gwilym James (dated Sept. 14th, 1914). Samuel Christopher Reeve Flaxman, James Mill Renton, and Allan Coulter Hancock (dated Sept. 15th, 1914). Frederick Sadleir Brereton, late Captain R.A.M.C., John McIntosh Morgan, James McTurk, Herbert Francis Woolfenden, James Kirker, John Stanley Lloyd, William Neave Kingsbury, George William Lloyd, Herbert Jack Rawson, Ernest Stratford, Richard Reid Kirkwood Paton, Claude Hebden Barker Booth, George Ernest Beaumont, Patrick Cagney, James David Grahame Stewart, Edgar Fletcher Edmunds, Stanley Parke Stoker, Harold Garnett Janion, Russell Facey Wilkinson, Oliver Cuff Link, Ernest Edwin Holden, Eustace Couper Black, William Griffith, and Charles St. Aubyn Vivian (dated Sept. 16th, 1914). Richard Frank Bolt, Daniel Stirling Cooper, William Claude Horton, Cecil Meredyth Jones, Richard Bertram Johnson, Alfred Charles Jepson, William Hilton Parry, Hugh Pierce, James Henry Paterson, and Henry Cecil Douglas Miller (dated Sept. 17th, 1914). Henry Anderson Lunn and James Wilson (dated Sept. 18th, 1914). Frederick Buick McCarter, Valentine Cleeve Martyn, David Young Buchanan, Emanuel Prinski Scott, Edward Leonard Puddicombe, Edward Hamilton, Murdoch Mann Rodger, James Randolph Gyllencrentz, George Arthur Spear, Henry Constantine Woodyatt, William Ainslie, Albert Turner, Ralph George Dainty, Captain Ryder Percival Nash, 2nd Eastern General Hospital, R.A.M.C., T.F., George Victor Bakewell, and Frederick Francis Middleweek (dated Sept. 19th, 1914). Gideon Walker, John Ferguson Smith, William Moodie, and Thomas Howard Body (dated Sept. 20th, 1914). Andrew Currie, Robert Hannah, Frederick George Sharpe, Stanley Ritson, Alexander Lindsay, William Henry Sutcliffe, Roy Warren Russell-Jones, Leslie Henderson Skene, Trevor Hamilton Wilkins, Ievan Herbert Powell, Basil Eustace Moss, Alexander Lindsay Aymer, Lewis Hay Frederick Thatcher, Isaac Bertram D'Olier, and Octavius de Burgh Marsh (dated Sept. 21st, 1914). Percy Gully and Bartholomew James Hackett (dated Sept. 23rd, 1914). Rudolph George Abercrombie Cornelius Alexander O'Driscoll, John Samuel Williamson, Herman Watson Webb, Sydney Hartley Hay, Robert Marshall, Arthur Arbuthnot Straton, William Harold Raphael McCarter, Charles Rees Smith, Samuel Gurney Dixon, David Joseph Mulholland, Alexander James Will, William Rankin, Basil Newman Murphy, Alan Gabriel Bodman, Reginald Beaumont Heygate, George Francis Hardy, Hugh Fleming Warwick, William Walls Waller, Reginald Charles Verley, Alexander Michael Ross, the Honourable Lennox Hannay Lindley, and Lionel Tomas Wells (dated Sept. 22nd, 1914). Eric Martyn-Clark, Christopher Charles Court, George D'Rastrik Carr, and Elston Herman Lawson (dated Sept. 23rd, 1914). Elliott Thornton Glenny and James Leitch Wilson (dated Sept. 24th, 1914). Daniel Thomas Henry Croly (dated Sept. 25th, 1914). Ernest Richard Gordon Greville, Charles Edward Redman, and William Edward Kyte Coles (dated Sept. 26th, 1914). John Inchbald Johnson, Alexander Croydon Palmer, and Alan Herrenden Birks (dated Sept. 28th, 1914).

Lieutenant Edward M. Thomson relinquishes his temporary commission (dated Sept. 19th, 1914).

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Captain George Lane to be Major (dated Sept. 30th, 1914). Supernumerary Captain George Lane is restored to the Establishment (dated Sept. 7th, 1914).

The undermentioned cadets and ex-cadets of the Officers Training Corps to be Lieutenants (on probation):—Alan Francis Grimbly (dated August 6th, 1914). William Kealty Campbell and John Herd Beverland (dated August 8th, 1914.) Kenneth Duncan Murchison and Hugh George Trayer (dated August 16th, 1914). Albert William Darnley Magee (dated August 21st, 1914). Edward Richardson Lovell and William Ferguson Wood (dated August 24th, 1914). William Roy Blore (dated Sept. 1st, 1914). Joseph Bannister Williamson (dated Sept. 2nd, 1914). Peter Francis Ward, Wyndham Williams, and John Pritt Jackson (dated Sept. 3rd, 1914). John Brumwell, John Kew Ritchie Landells, John Clark Pyper, and James Lanigan (dated Sept. 6th, 1914). Francis Albert Eley Crew, David Stewart, and Raymond Fearle Pinson (dated Sept. 7th, 1914). Eric Watson Williams, William John Adie, Walter James Fairlie Craig, and Reginald Oliver Eades (dated Sept. 8th, 1914). Ian Campbell Mackay, Rudolph Albert Peters, and Richard Andrew Austin (dated Sept. 9th, 1914). William Somerset Birch (dated Sept. 10th, 1914). George Stanton, William Johnson, Adiel Elad Hazael Reid, John Hawkes Pendered, Arthur Leonard Shearwood, Ralph Reakes Thompson, and Cyril Ratcliffe Sandiford (dated Sept. 11th, 1914). Samuel Walter Maslem Jones and Joseph Herbert Bayley (dated Sept. 12th, 1914). Ernest Marshall Cowell and Geoffrey Norman Smyth (dated Sept. 14th, 1914). Reginald Salisbury Woods (dated Sept. 15th, 1914).

The undermentioned to be Lieutenants (on probation):—Richard Arthur Stewart (dated August 30th, 1914). Frederick Arnot Bearn and Alexander James Ewing (dated Sept. 1st, 1914). Harold Emerson Rose and Richard Naunton Ouseley Moynan (dated Sept. 2nd, 1914). Edward Hesketh Roberts, Morgan Joseph Bernard Francis Burke-Kennedy, John Victor Livingstone Grant, John Woodruff Craw, Francis Balkwill, and William Wyllie McNaught (dated Sept. 3rd, 1914). Edmund Britten Jones, James Vallance, Joseph Andrew Lawther Wilson, Thomas MacKinlay Miller, George Guthrie Marshall, and Mark Avent (dated Sept. 4th, 1914). Geoffrey Ward Wood and Robert Ernest Bell (dated Sept. 5th, 1914). Leonard Foster Browne, John Prince Stallard, and Ernest Talbot (dated Sept. 6th, 1914). Timothy Francis Hegerty, Douglas Gordon Evans, Charles Cochrane Iles, and William Stanley Haydock (dated Sept. 7th, 1914). Frank Griffith (dated Sept. 8th, 1914). Alfred Joseph Clark, Geoffrey Marshall, and Bernard Grellier (dated Sept. 9th, 1914). Cuthbert Hastings Attenborough, Harold James Storrs Morton, Reginald Heber Leigh, Edward Sancton Walls, George Martin Chapman, Alfred Maurice Thompson, and James Davidson (dated Sept. 10th, 1914). James Bethune Scott, John Phimister Mitchell, Ronald Gordon John McEntire, Edward Claude Linton, John Prosser Davies, David William John, and George Robert Bruce (dated Sept. 11th, 1914). Patrick McDonnell, Bernard Murphy, and Donald Aucutt (dated Sept. 12th, 1914). William Henry Wood (dated Sept. 13th, 1914). Peter Warwick Ransom, Kenneth Biggs, John Berchmanns Minch, and Henry Alphonsus Harbison (dated Sept. 15th, 1914). Frank Robinson Kerr, Cyril Popham, David Sutherland Badenoch, Bertram Shires, Oriel John O'Brien O'Hanlon, Archibald Wilson, and William Goodman Shakespeare (dated Sept. 16th, 1914). Joseph Illingworth Lawson, William Campbell Fleischmann, Hugo Rudolph Friedlander, and Cassidy de Wet Gibb (dated Sept. 17th, 1914).

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st East Anglian Field Ambulance:—The undermentioned Captains to be Majors (dated Sept. 26th, 1914): Gerald Moore Hetherington and Octavius Roberts Ennion.

1st Home Counties Field Ambulance: Lieutenant Thomas Henry Peyton to be Captain (dated Sept. 3rd, 1914).

2nd Welsh Field Ambulance: Captain Charles R. White to be Major (dated August 5th, 1914). Lieutenant Arthur C. Devereux to be Captain (dated August 5th, 1914).

3rd Lowland Field Ambulance: Archibald Cotterell McMaster to be Lieutenant (dated August 10th, 1914). James Abbey Henderson to be Lieutenant (dated August 10th, 1914).

1st Northumbrian Field Ambulance: Captain James P. Milne to be Major (dated 22nd August, 1914).

5th Southern General Hospital: Major John Kyffin to be Lieutenant-Colonel (dated Sept. 5th, 1914).

2nd West Riding Field Ambulance: Wallace Wright Adamson to be Lieutenant (dated Sept. 10th, 1914).

3rd Northumbrian Field Ambulance: The undermentioned Captains to be Majors: Percy R. Ash and William A. Thompson (dated Sept. 10th, 1914). Arthur Charles Mears Savage to be Lieutenant (dated June 22nd, 1914).

1st South-Western Mounted Brigade Field Ambulance: Lieutenant William C. Hodges is absorbed into the establishment (dated Sept. 16th, 1914).

1st Welsh Field Ambulance: Lieutenant-Colonel John William Davies resigns his commission, and is granted permission to retain his rank and wear the prescribed uniform (dated Sept. 30th, 1914). Major Evelyn John Robert Evatt, from the Unattached List for the Territorial Force, to be Major (dated Sept. 30th, 1914).

2nd Highland Field Ambulance: Hawtrey William Browne to be Lieutenant (dated Sept. 30th, 1914).

3rd East Lancashire Field Ambulance: Quartermaster and Honorary Lieutenant James E. H. Anderton, from East Lancashire Clearing Hospital, to be Quartermaster, with the honorary rank of Lieutenant (dated Sept. 30th, 1914).

2nd London (City of London) General Hospital: Walter Goldie Howarth to be Captain (dated Sept. 26th, 1914).

4th London General Hospital: Captain Ernest Rock Carling is restored to the establishment (dated Sept. 5th, 1914). Captain William Turner is restored to the establishment (dated Sept. 5th, 1914).

1st Northern General Hospital: Sydney James Clegg to be Captain (dated Sept. 30th, 1914).

1st South Midland Mounted Brigade Field Ambulance: Robert Wallace Aitken to be Lieutenant (dated Sept. 30th, 1914).

1st Southern General Hospital: Leonard Gregory Parsons to be Captain (dated Sept. 30th, 1914).

East Lancashire Clearing Hospital: Quartermaster and Honorary Lieutenant Arthur H. Hartshorn, from the 3rd East Lancashire Field Ambulance, to be Quartermaster with the honorary rank of Lieutenant (dated Sept. 30th, 1914).

Add *Attached to units other than Medical Units.*—Surgeon-Lieutenant-Colonel Charles Downing is seconded (dated Sept. 30th, 1914). Surgeon-Captain Henry James Taylor to be Major (dated Sept. 30th, 1914). Captain Edgar Vaughan Phillips, from the 5th Northern General Hospital, to be Captain (dated August 6th, 1914). Surgeon-Captain Jonas W. Anderson, from the 4th Battalion the Royal Welsh Fusiliers, to be Captain (dated Sept. 30th, 1914). Captain Winstan St.A. St. John resigns his commission on account of ill-health (dated Sept. 30th, 1914). Lieutenant Eric D. Gairdner to be Captain (dated August 10th, 1914). Lieutenant Hugh L. Munro to be Captain (dated August 28th, 1914). Lieutenant Ernest W. Reed to be Captain (dated Sept. 1st, 1914). Lieutenant Alexander G. Lovett-Campbell to be Captain (dated Sept. 3rd, 1914). Lieutenant Charles Douglas to be Captain (dated Sept. 8th, 1914). George Bainton Forge to be Lieutenant (dated August 8th, 1914). James York Moore to be Lieutenant (dated Sept. 30th, 1914). Captain Charles J. Martin to be Major (dated Sept. 30th, 1914). Surgeon-Captain John Livingstone, from the Westmorland and Cumberland Yeomanry, to be Captain (dated

Sept. 16th, 1914). Francis Henry Sprague to be Lieutenant (dated Sept. 30th, 1914). Captain John Best McBride to be Major (dated Sept. 26th, 1914). Lieutenant Christopher Francis Murphy to be Captain (dated Sept. 1st, 1914).

COLONIAL MEDICAL SERVICES.

West African Medical Staff.—Dr. J. H. Collier, senior medical officer (Grade III.) Nigeria, has been transferred to the Gold Coast; Mr. N. A. D. Sharp, medical officer, Gold Coast, has been transferred to Nigeria; Dr. A. F. Kennedy has been transferred to Nigeria; and Mr. R. W. Orpen, medical officer, Sierra Leone, has been transferred to the Gambia. Major W. H. G. H. Best, R.A.M.C. (Special Reserve), senior medical officer, Grade I. (Nigeria), has been appointed a Principal Medical Officer in Nigeria. Mr. H. McC. Hänschell has resigned and Mr. J. R. P. Allin has retired with a gratuity. The following have been selected for appointment to the staff: Dr. J. J. Baeza (Gold Coast), Mr. N. S. Deane (Sierra Leone), Dr. J. C. Watt (Sierra Leone), and Dr. J. T. Watt (Nigeria).

Other Colonies and Protectorates.—The following have also been selected for appointment as noted: Colonel J. R. Dodd, R.A.M.C., medical officer in charge of ankylostomiasis work in Trinidad; Mr. C. G. H. Campbell, assistant medical officer for ankylostomiasis work in Trinidad; Dr. A. Kidd, house surgeon of the Victoria Hospital, and bacteriologist, St. Lucia; Dr. R. S. Taylor, temporary medical officer, Uganda; Dr. N. Crichlow, medical officer in the Solomon Islands Protectorate; and Dr. W. M. W. Shepherd, medical officer in Zanzibar.

DEATHS IN THE SERVICES.

Surgeon-General Sir Annesley Charles C. de Renzy, K.C.B., on Sept. 24th, at Ealing, aged 85. He served in the second Burmese War of 1852-3 (medal with clasp), and during the Indian Mutiny he was present at the siege and capture of Lucknow. Later he was appointed first Sanitary Commissioner of the Punjab, and in 1878 Sanitary Commissioner of Assam. He was principal medical officer in the expedition against the Naga hill tribes in 1879, when he was present at the capture of Konoma (mentioned in despatches and awarded a clasp and the Companionship of the Bath). He retired in 1882. He was created a K.C.B. in 1902.

FREE CARRIAGE OF PARCELS FOR THE TROOPS AT THE FRONT. — Messrs. Neale and Wilkinson, Limited, shipping agents, &c., of 32, St. Mary Axe, London, E.C., and 60, Hanover-street, Liverpool, who during the South African war conveyed parcels of clothing, necessaries, and comforts to the soldiers on active service free of charge, have offered to render similar assistance during the present war. The offer has received the approval of the Army Council. Packages of any weight up to 56 lb. will be accepted for free carriage, but in order to comply with War Office regulations no wines, spirits, or matches may be enclosed, nor fresh fruit, vegetables, or any article of a perishable nature likely to cause damage. Full particulars and labels may be obtained from either of the above-mentioned addresses.

UNIVERSITY OF LONDON.—Professor E. A. Minchin, F.R.S., professor of protozoology in the University, will give a course of from 12 to 15 lectures on "Development and Life Cycles in the Protozoa" at the Lister Institute of Preventive Medicine at 5 P.M. on Tuesdays and Fridays during the Second Term (January to March). These lectures, which are free by ticket, will be addressed to Honours B.Sc. students and to medical men, and will be followed by exhibits of preparations as occasion requires.—The following entrance scholarships have been awarded at the London (Royal Free Hospital) School of Medicine for Women: Two St. Dunstan's Medical Exhibitions of the value of £60 a year for three or five years to Miss K. M. Matthews and Miss R. C. Townshend; Isabel Thorne Scholarship of the value of £30 to Miss D. Pantin; Mabel Sharman Crawford Scholarship of the value of £20 a year for four years to Miss L. C. Adam.—On Sept. 1st the Vice-Chancellor (Sir W. P. Herringham) and the Principal (Sir Henry A Miers) addressed a communication to His Excellency the Belgian Minister in the following terms: "On behalf of the University of London we desire to express to the Belgian Government and to the University of Louvain our profound sympathy with them in the cruel loss they have sustained by the destruction of their historic buildings and library, a calamity which has inflicted an irreparable loss not only upon Belgium, but on the whole civilised world."

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING AUGUST, 1914.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 7·5 per 1000 of the population, estimated at 4,516,612 persons in the middle of the year; in the three preceding months the rates were 7·5, 7·6, and 7·8 per 1000 respectively. The lowest rates last month were recorded in Paddington, Hampstead, Stoke Newington, Holborn, and Wandsworth; and the highest rates in the City of London, Bethnal Green, Stepney, Southwark, and Deptford. Scarlet fever was slightly less prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease last month was recorded in Chelsea, the City of London, Stepney, Southwark, Battersea, and Deptford. The Metropolitan Asylums Hospitals contained 3199 scarlet fever patients at the end of last month, against 2859, 3045, and 3113 at the end of the three preceding months; the weekly admissions averaged 414, against 376, 396, and 410 in the three preceding months. The prevalence of diphtheria also showed a decline last month; this disease was proportionally most prevalent in Finsbury, Shoreditch, Bethnal Green, Stepney, Southwark, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1078, 1080, and 1042 at the end of the three preceding months, had further fallen to 1030 at the end of last month; the weekly admissions averaged 128, against 130, 140, and 131 in the three preceding months. Enteric fever was rather more prevalent than it had been in any of the five preceding months; among the several metropolitan boroughs this disease was proportionally most prevalent last month in Fulham, the City of Westminster, St. Marylebone, Holborn, Bethnal Green, and Southwark. There were 39 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 39, 40, and 36 at the end of the three preceding months; the weekly admissions averaged 7, against 6, 8, and 6 in the three preceding months. Erysipelas was proportionally most prevalent in St. Pancras, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Deptford. The 18 cases of puerperal fever notified during the month included 4 in Stepney and 2 each in St. Marylebone and Southwark. The 4 cases of cerebro-spinal meningitis included 2 in Poplar and 1 each in Hackney and in Greenwich; and of the 16 cases of poliomyelitis, 6 belonged to Stepney, 4 to Bethnal Green, and 1 each to the City of Westminster, St. Pancras, Islington, Hackney, Poplar, and Camberwell.

The mortality statistics relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the population of the several boroughs. During the four weeks ending August 29th the deaths of 4378 London residents were registered, equal to an annual rate of 12·6 per 1000; in the three preceding months the rates had been 12·9, 12·6, and 11·3 per 1000 respectively. The death-rates last month ranged from 7·2 in Hampstead, 8·8 in Chelsea and in Lewisham, 9·1 in Stoke Newington, 9·7 in Paddington, and 10·0 in the City of Westminster, to 16·5 in Bethnal Green, 16·9 in Finsbury, 17·7 in Stepney, 18·1 in Poplar, 18·2 in Bermondsey, and 19·8 in Shoreditch. The 4378 deaths from all causes included 707 which were referred to the principal infectious diseases; of these, 149 resulted from measles, 20 from scarlet fever, 29 from diphtheria, 57 from whooping-cough, 10 from enteric fever, and 442 from diarrhœa and enteritis among children under 2 years of age. No death from any of these diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Paddington, Chelsea, the City of Westminster, Hampstead, Lewisham, and Woolwich, and the highest rates in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey. The 149 fatal cases of measles were 58 in excess of the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal last month in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Southwark. The 20 deaths from scarlet fever were 2 in excess of the corrected average number, and included 3 in Camberwell, and 2 each in Fulham, St. Marylebone, St. Pancras, Stepney, Southwark, and Bermondsey. The 29 fatal cases of diphtheria slightly exceeded the corrected average number, and included 3 in Islington, 3 in Bethnal Green, 3 in Stepney, and 2 each in the City of Westminster, Poplar, Southwark,

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING AUGUST, 1914.

(Specially compiled for THE LANCET.*)*

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON...	**4,516,612**	—	**1650**	**517**	—	**56**	—	**18**	**339**	**4**	**16**	**2600**	**7·5**	—	**149**	**20**	**29**	**57**	**10**	**442**	**707**	**2·0**	**4378**	**12·6**
West Districts.																								
Paddington	142,055	—	33	14	—	2	—	—	6	—	—	55	5·0	—	—	—	1	1	—	8	10	0·9	107	9·7
Kensington	170,817	—	69	9	—	—	—	1	15	—	—	94	7·2	—	2	—	1	1	—	9	13	1·0	143	10·9
Hammersmith	124,750	—	53	11	—	2	—	—	4	—	—	70	7·3	—	3	—	1	2	—	12	18	1·9	103	10·7
Fulham	158,849	—	59	6	—	7	—	1	12	—	—	85	7·0	—	6	2	1	1	—	16	26	2·1	131	11·2
Chelsea	63,791	—	30	3	—	—	—	—	1	—	—	34	6·9	—	1	—	—	—	—	2	3	0·6	45	8·8
City of Westminster	152,346	—	51	12	—	3	—	—	11	—	1	78	6·7	—	2	—	2	3	1	1	9	0·8	111	10·0
North Districts.																								
St. Marylebone	112,892	—	32	11	—	5	—	2	4	—	—	54	6·2	—	1	2	1	1	—	6	11	1·3	95	11·2
Hampstead	86,731	—	25	8	—	—	—	—	—	—	—	33	5·0	—	—	—	—	—	—	4	4	0·6	45	7·2
St. Pancras	212,497	—	84	29	—	3	—	—	22	—	1	139	8·5	—	3	2	—	2	—	22	29	1·8	219	13·4
Islington	324,764	—	110	40	—	3	—	—	21	—	1	175	7·0	—	13	1	3	3	1	34	55	2·2	320	12·5
oke Newington	50,454	—	12	3	—	—	—	—	2	—	—	17	4·4	—	1	—	1	1	—	1	4	1·0	37	9·1
Hackney	223,724	—	50	32	—	1	—	1	13	1	1	99	5·8	—	6	—	1	2	2	15	26	1·5	200	11·8
Central Districts.																								
Holborn	45,861	—	10	4	—	2	—	—	1	—	—	17	4·8	—	2	—	—	—	—	2	4	1·1	57	16·3
Finsbury	83,212	—	32	14	—	—	—	1	8	—	—	55	8·6	—	11	—	—	5	—	10	26	4·1	109	16·9
City of London	17,129	—	10	2	—	—	—	—	—	—	—	12	9·1	—	—	—	—	—	—	—	—	—	15	11·9
East Districts.																								
Shoreditch	108,869	—	33	18	—	1	—	1	12	—	—	65	7·8	—	21	—	—	8	—	30	59	7·1	160	19·8
Bethnal Green	127,662	—	52	27	—	3	—	1	13	—	4	100	10·2	—	12	1	3	3	1	21	41	4·2	156	16·5
Stepney	273,265	—	207	59	—	4	—	4	39	—	6	319	15·2	—	17	2	3	2	1	54	79	3·8	357	17·7
Poplar	160,222	—	34	16	—	2	—	1	26	2	1	82	6·7	—	12	1	2	2	—	28	45	3·7	225	18·1
South Districts.																								
Southwark	186,941	—	97	28	—	4	—	2	21	—	—	152	10·6	—	10	2	2	4	1	30	49	3·4	225	15·7
Bermondsey	124,213	—	47	11	—	—	—	—	9	—	—	67	7·0	—	6	2	—	—	—	21	29	3·0	173	18·2
Lambeth	296,724	—	114	30	—	2	—	1	19	—	—	166	7·3	—	1	—	2	3	—	31	37	1·6	271	11·7
Battersea	167,338	—	77	9	—	1	—	1	8	—	—	96	7·5	—	7	—	1	3	1	17	29	2·3	155	12·2
Wandsworth	338,998	—	63	22	—	3	—	—	12	—	—	100	3·8	—	—	—	—	5	1	22	28	1·1	264	10·2
Camberwell	262,020	—	97	22	—	4	—	1	17	—	1	142	7·1	—	5	3	1	3	1	14	27	1·3	216	10·6
Deptford	109,182	—	55	14	—	1	—	—	27	—	—	97	11·6	—	2	—	1	—	—	12	15	1·8	105	12·3
Greenwich	96,037	—	31	8	—	1	—	—	5	1	—	46	6·2	—	3	—	1	—	—	11	15	2·0	106	14·2
Lewisham	172,433	—	48	23	—	1	—	—	6	—	—	78	5·9	—	1	1	1	1	—	4	8	0·6	119	8·8
Woolwich	122,836	—	35	32	—	1	—	—	5	—	—	73	7·7	—	1	1	—	1	—	5	8	0·8	109	11·9
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

and Lambeth. The 57 deaths from whooping-cough were 4 above the corrected average; the highest death-rates from this disease were recorded in the City of Westminster, Finsbury, Shoreditch, and Southwark. The 10 fatal cases of enteric fever were also slightly above the corrected average number, and included 2 in Hackney. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases, excluding diarrhœa, was 35·9 per cent. above the average.

THE REFUGEES AT THE ALEXANDRA PALACE.

(BY OUR SPECIAL SANITARY COMMISSIONER.)

THE small pile of smoking ruins representing what remained of the Belgian peasant's home must contrast curiously to his eyes with the lofty structure of the Alexandra Palace. Some of the poor guests we are now sheltering in the Palace had never left their native settlements; they had not even seen any of the larger towns of Belgium. Then suddenly, before they had quite grasped the fact that war had been declared or what war meant, their little village was invaded. Under the pretext that some civilian had fired at the enemy, murder, arson, and rapine followed. Those who could escape hid in the woods, the quarries, and sometimes even in sewers. In time, after in some cases three or four weeks of wandering, sleeping under hayricks and stealing forward from various places of concealment, a family, fortunate indeed if it still remained a complete family, terrified, bedraggled, weatherworn, and utterly exhausted, would reach Antwerp. But Antwerp is a beleaguered city, and must think of the situation from that point of view. So the Belgian peasants are given some little temporary aid, are medically examined to see that they are free from infectious disease, put on board an English ship, land in due course at Tilbury, and suddenly find themselves in the huge palace which used to be the holiday resort of North London. Such an experience must have seemed like a fantastic dream to many; it is, in fact, exactly such an episode as constantly occurs to dreamers in the "Arabian Nights' Entertainments."

Work at Express Pace.

Notwithstanding the spaciousness of the Palace, with its lofty walls and great domed roofs, the magnificent views over the great metropolis, the stately trees, the smooth grass lawns, the smiling flowers—notwithstanding all this, the grim realities of the heart-rending drama enacted on these former pleasure grounds cannot be entirely concealed. The very hurry with which everything had to be done was distressfully dramatic. It was on Sept. 4th that the first notice was given to the officials at the Local Government Board that the reception of refugees would be committed to them. Efforts were at once made to secure the Crystal Palace, and though this negotiation was not successful 200 refugees were lodged there while the matter was being discussed. On Sept. 5th the old Poland-street workhouse was secured. This building was about to be destroyed. The water and the gas fittings had already been removed, and had to be replaced with all speed. Luckily, the drains were still in good order. On Sept. 6th the Local Government Board secured the former Edmonton and Hackney workhouses. By that time 447 refugees had already come over. On the following day intimation was given that thousands, not hundreds, were expected—20,000 from Antwerp and 30,000 from Ghent. The position was therefore serious, particularly as no arrangement could be made with the Crystal Palace. On Sept. 8th the Alexandra Palace was secured, the gates were closed, the Government took over the building and the grounds, and at once asked the Metropolitan Asylums Board to convert it into a refuge. By Sunday, the 13th, they had already extemporised 1000 beds, and, as related in my report last week, by Monday, the 14th, no less than 925 refugees had arrived.

Fortunately, recent alterations in methods of poor relief have brought about the abandonment of many old workhouses, and the number of cells required for casuals has been reduced from 1100 to 200. Thus the celebrated St. Giles workhouse in Endell-street was vacant, and here also 1000 beds were promptly prepared. The workhouse which the old Strand Union built at Edmonton, and which was going to be converted into an asylum for imbeciles, has likewise been temporarily handed over to the Local Government Board and can accommodate another 1000 refugees. The Endell-street workhouse was to have been used as a refuge for dependents on German suspects; but as they were not numerous they were sent to the workhouse in St. Mary's-place, Kensington. The Kensington, St. Pancras, Hackney, and Westminster infirmaries provided temporary accommodation for the sick and for lying-in cases.

Freedom from Infectious Disease.

The whole system of isolation of the Asylums Board is available for infectious cases; but the refugees so far have been fortunately free from such complaints. Here and there a child with whooping-cough has been detected, and one or two children had symptoms of scarlet fever. Only at Folkestone have two refugees been detained because they were suffering from small-pox. Thus it will be seen that there is a remarkable absence of zymotic disease, but this is no reason for relaxing the careful watch that is kept upon the new arrivals. Indeed, measures are taken to extend this watchfulness indefinitely. It is not proposed that the refugees should remain in the asylums, and I believe that they can be immediately allotted to private families willing to offer them hospitality. Wherever they may go the mayor and sanitary authorities of the locality must be informed, and the latter must make inquiries from time to time as to the health of the nation's guests. On the other hand, a strong feeling has arisen from experience that it would be wiser and better in every way to retain the refugees for a few days before they are sent off to live in private families.

First Care of the Refugees.

It must be borne in mind that many of the refugees are ignorant as well as poor peasants, and though very clean many of them have never seen a bathroom or a water-closet. At the Alexandra Palace one of the first steps taken was to teach the refugees how to use the water-closets. It was necessary to prevent them from standing on the seats and from throwing all manner of things into the pan that might block the drains. Such teaching was the more urgent, as the need of closets being much greater for residents than for visitors, the number provided at the Alexandra Palace, which was not built for dwelling purposes, was at first insufficient. Therefore supplementary latrines were set up in the grounds. Immediately on arrival the refugees need not only good baths but some of them are very miserable for want of clothes. Fortunately at the Palace there is a large compartment with piles of clothes, gifts sent for the use of the refugees. It takes time, however, to distribute these to the best advantage.

The Alexandra Palace is being used as a clearing-house for the refugees, but from the above it will be seen that before putting them into a strange English home it would be preferable to keep them for a few days under observation at the refuge. Thus they may learn a little about English ways, get partially accustomed to the change of scene, get better fitted with clothes, and perhaps even pick up two or three words of English. If there is any latent sickness it may thus be found out. At the Alexandra Palace the "Bijou theatre" has been converted into an excellent hospital with snug little cots for the children. The matron, Miss Cockerell, was matron of the Marylebone Infirmary. Her services, lent by the Marylebone guardians, have proved of great value to the Belgian refugees.

Sleeping Accommodation.

The train on arrival enters the Palace grounds, but it is necessary to ascend a broad flight of steps before reaching the inside of the building. This is fortunate in a way, for by placing barriers made with rows of chairs the crowd can be divided up and the business of allotting beds to each rendered less difficult. Of course, there are no bedrooms at the Alexandra Palace, and when the structure was first taken over it was not possible to obtain any bedsteads whatsoever. It seemed as if every available bedstead had been sold and that it would be necessary to wait till more could be manufactured. At first, therefore, all that could be done was to place mattresses on the floor. Nor was it possible to provide more bedding than a pillow and some rugs. In a few days pillow cases were made and by Sept. 21st the Metropolitan Asylums Board was able to obtain 1000 bedsteads, which were to be delivered promptly; and further deliveries of 1000 bedsteads per week are promised. None had arrived when I visited the Palace, and it was a queer sight to see hundreds of beds on the floor with a chair as a sentinel separating mattress from mattress. In one gallery, on the first floor, with a magnificent south view and a broad balcony that would be admirably suited for out-of-door medical treatment, there were 360 beds on the floor. The window space takes up a good third of the wall space, and there are windows facing which give on to the corridor, and thus a through draught can be established. The height of the galleries also helps to secure an ample air-supply. The skating rink, which is likewise very lofty, has 400 beds, and there is a ventilation air-exhaust all round the ceiling. A part of the great central hall is screened off and we have some hundreds of beds there. The orchestra, at the foot of the grand organ, having numerous immovable and numbered seats, has ingeniously been converted into a vast parcel or cloak depôt. Each refugee has one of the numbered seats allotted to him, and there places his bundle, packet, box, or whatever he may have with him. Where the musicians usually sit there is now a vast collection of the most inharmonious luggage.

Good Food, Good Air, and Rest.

Then we have the question of food. The kitchens at the Alexandra Palace had been filled up with lumber and the kitcheners removed, for the premises were not in use. To clear all this away and to bring in cooking apparatus and crockery it was necessary to work night and day. Fortunately the services of a very able Belgian chef were secured, and electric power machinery for cutting bread, preparing vegetables, and grinding coffee was quickly introduced. All laundry work is sent out to the Asylums Board laundries. Thus, even for the first arrivals hot meals were ready. On the day of my visit they had leek soup, so succulent and delicately flavoured that many of the refugees demanded three helpings. In how many English homes are they likely to obtain skilfully prepared leek soup?

The attendants grew eloquent on the improvement wrought in the appearance of these poor people after they had spent a day or two at the Palace. Of course, it is in the children that the signs of recuperation show themselves first, as I can testify from my recollection of the appearance of the landing parties. There is much to divert the children in the Palace. Some trace of the old shows still remains, notably a large cage with beautiful parrots. Various strangely decorated, even if empty, stalls are stared at with wonder. Then there are statues, a few pictures, and many fine semi-tropical plants, some swings in which the children delight, and the vast grounds with flower beds, trees, and soft green grass. The air also is pure and bracing. To stay at the Alexandra Palace is the most suitable tonic that could possibly have been prescribed so as to revive and restore these suffering victims of a most cruel war. Many of our luckless guests have suffered too much and have lost too much to be immediately influenced in a great degree by shelter and kindness, but the improvement, physical and mental, is there and gradually shows itself.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL SCHOOL.—After an examination on Sept. 21st and 22nd the following awards have been made. Entrance scholarship in arts (value £100), J. T. Long (Coopers' Company's School) and D. Spurway (Bridgnorth Grammar School), equal. Jeaffreson exhibition (value £50), A. B. Bernard (Dulwich College).

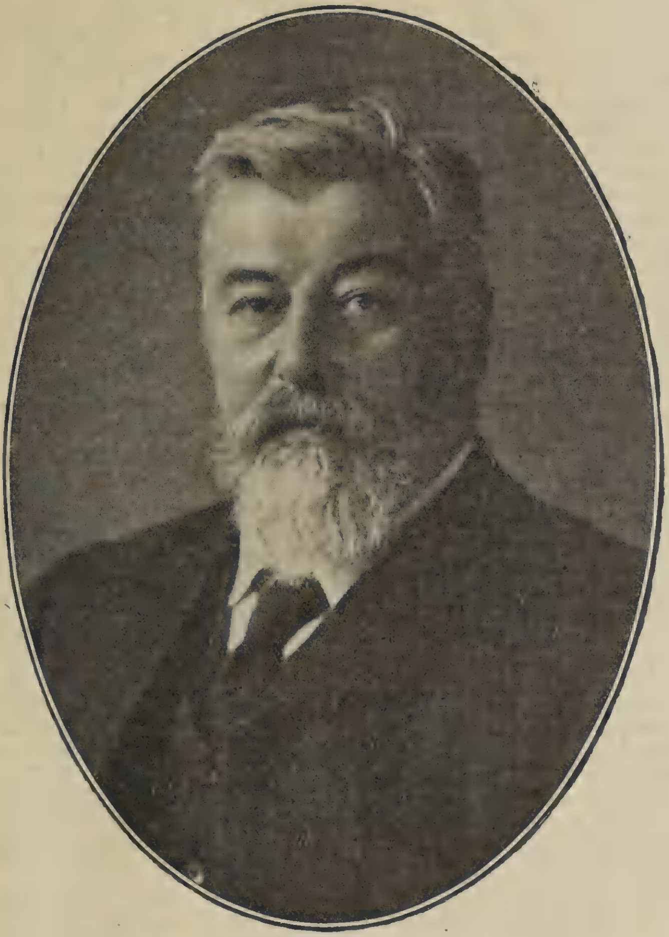
LONDON PANEL COMMITTEE.—As London panel practitioners are receiving this week the £90,000 accumulated in 1913 in respect of insured persons who had not chosen a doctor, the Panel Committee on Sept. 29th decided, as a thankoffering and a suitable gift from members of the medical profession at the present juncture, to invite the 1500 doctors concerned to subscribe towards a present of a motor ambulance for the British Red Cross Society. It was decided not to accept membership of the proposed Federation of Local Medical and Panel Committees as at present constituted. It was objected that as the metropolis has its own special problems the Panel Committee could not bind itself to take no important action without first consulting the Federation, on whose executive it would only have two members out of 15. Discussion took place on a list, promulgated by the Insurance Committee, of proprietary and other drugs and appliances which, it was suggested, should be definitely excluded from insurance prescribing. It was felt undesirable that the precedent should be established of permitting a lay body to dictate in the matter of prescribing, and that the best method of checking any excessive prescribing would be to require individual practitioners to justify to the Panel Committee prescriptions to which objection was taken. Resolutions embodying this view were passed.

Obituary.

WALTER HOLBROOK GASKELL, M.D. CAMB., F.R.S., HON. LL.D. EDIN. AND McGILL,

FELLOW OF TRINITY HALL AND UNIVERSITY LECTURER IN PHYSIOLOGY, CAMBRIDGE.

IT is safe to say that to no physiologist does medicine owe a debt greater than that which it owes to Walter Holbrook Gaskell, for, in the course of his work on the sympathetic nervous system, he laid for all time the foundations of the pathology of the heart. Broadly speaking, Gaskell may be said to have accomplished two things—he determined the functional relations of nerve cell and muscle fibre, especially of cardiac and plain muscle fibre; and he gave us a complete and consistent theory of the general functional and anatomical relations of the nerve fibres and nerve cells of the sympathetic system. When in 1874 he went, at Michael Foster's suggestion, to Leipsic to Ludwig's laboratory, it was with the intention of working at problems connected with the sympathetic system, and his first work, which appeared in Ludwig's *Arbeiten*, dealt with the regulation of the blood flow through skeletal muscle—that is to say, with the way in which the varying degree of contraction of the muscular coats of the arteries is brought about. From this he passed to the general question of the functional relation of nerve cell, nerve fibre, and muscle fibre, especially with reference to the cause of the rhythm of the heart, and the nature of action of the cardiac and vaso-motor nerves. The completion of the work on the heart in 1881 was followed by a return to the general problem of the minute anatomy and function of the sympathetic system and its relation to the central nervous system; and the results were published in the *Journal of Physiology* in 1886 in a paper on the Structure, Distribution, and Function of the Nerves which Innervate the Visceral and Vascular Systems.



WALTER HOLBROOK GASKELL.

(Reproduction of photograph by Messrs. Elliot and Fry.)

When Gaskell began to work the nerve cell was looked upon as the sole cause of the contraction and tone of muscle. Therefore, since the heart can continue to beat when its connexions with the central nervous system are severed, its automatic properties were supposed to lie in the nerve cells of the cardiac ganglia. Similarly, when it was discovered that the loss of tone in the arteries which follows on severance of the nerves going to them is only temporary, the recovery was ascribed to the action of peripheral ganglion cells, which by sending out "tonic" nervous impulses restored and maintained arterial contraction.

At no time in his career did Gaskell fall under the spell of this doctrine. The very earliest experiments carried out in Ludwig's laboratory in 1874 convinced him that at the least it did not contain the whole truth. His earliest papers were written to prove that the muscle cell is not merely the passive instrument of the nerve cell, but is the seat of independent activity and responds directly to changes in the lymph or blood. From this followed the important conclusion that in the regulation of the blood flow through an organ the direct influence of chemical substances, produced locally by the cells of the organ, upon the muscular coats of the arteries must play an important part. The possession of independent rhythmic activity by plain and cardiac muscle was directly proved when strips of such muscle absolutely devoid of nerve cells were found to be capable of beating regularly. We now know that ordinary skeletal muscle—so typically passive during life—has the property of automatic action so little obscured as to be restored by a slight change in the salt content of the fluid bathing it. But in the "seventies" the admission of automatic powers outside the nerve cell was as novel as the admission that animal protoplasm possesses synthetic powers which Ludwig compelled a still earlier generation of physiologists to make.

The course of the cardiac systole was at first sight less easily understood as a purely muscular event. How in the absence of nervous coördination could the orderly sequence of contraction of the chambers be brought about? Gaskell solved the difficulty in the simplest way. He showed that a beating strip of muscle free from nerve cells is divided into two portions beating in sequence when the wave of contraction is partially blocked at one part by cold or pressure. This led him to his final conception of the systole as a wave of contraction which starts in the roots of the great veins and sweeps without a break over the cardiac muscle to the aorta. At the junction of the auricles and ventricles the wave is delayed by the presence there of relatively slowly conducting tissue so as to provide the necessary pause between the auricular and ventricular systoles.

The work on the nerves of the heart must rank as of equal importance with the proof of the automaticity of the muscular fibre. This work may be said to have provided a clear account of the structure and opposed functions of inhibitory and accelerator fibres previously much confused, and to have settled their place as specialised homologues of the vaso-constrictor and vaso-dilator fibres of the arteries. Probably the most fundamental observation made lies in the discovery of the opposite electrical effects produced in the muscle by stimulation of the two sets of nerve fibres. Stimulation of the accelerator fibres provokes an electrical change similar to that typical of muscular contraction; stimulation of inhibitory fibres produces a change the opposite to this. These electrical changes are independent of contraction since they can be observed in the completely quiescent heart. The recent striking progress towards a final theory of the processes of excitation and contraction has made clear the profound significance of this observation. It has not yet taken its place in the interpretation of the electrocardiogram. In 1881 Gaskell gathered the fruits of his work on the heart into the Croonian lectures of that year. No one who hopes seriously to advance the pathology of the heart can afford to neglect the study of this work; it cannot be taken at second hand.

To appreciate justly Gaskell's contributions to biological science it must be realised that his work on the heart, complete and far-reaching as it is, is only a fragment of his larger work on the sympathetic system. Any summary which could be attempted here must be so inadequate as to be ridiculous. All that can be done is to point out that whereas before his time the sympathetic system was regarded as a second system existing side by side and comparable with the central nervous system, from which it received the white rami communicantes, and to which it sent the grey rami, it is, owing to him, now known to be merely the highly specialised outflow of nerve fibres from the central nervous system to the visceral and vascular systems. The combined penetration and breadth of view which characterise the great paper of 1886, already alluded to, mark it one of the most remarkable achievements in the literature of science.

The attempt which Gaskell made in the years following 1881 to express the structures of the brain in terms of a typical segment of the spinal cord led him to formulate a remarkable theory of the origin of the central nervous system of vertebrates, according to which the central canal is the lumen of a primitive gut. This view has been much contested, and it cannot be said to have won the support of morphologists; but whatever the final verdict may be, the admirable work done in connexion with it upon the nervous system and allied organs of *Limulus* and the lamprey is of lasting value. Mention must be made of one special service rendered to medicine. Gaskell, in conjunction with Dr. L. E. Shore, proved by a series of bold experiments that the fall of blood pressure which follows administration of chloroform is due to the action of the drug upon the heart, and not, as had been maintained, upon the vaso-motor centre. The investigation of the action of this drug was undertaken at the request of the Hyderabad Commission.

Dr. Gaskell came of the well-known Unitarian family of that name in the North of England. He was born at Naples on Nov. 1st, 1847, the son of Mr. John Dakin Gaskell, barrister, and Anne, his wife. He received his early education at Sir Roger Cholmeley's School, Highgate, and entered Trinity College, Cambridge, in 1865. There he studied mathematics and his name appears amongst the wranglers of 1869. Michael Foster, as prælector in physiology at Trinity College, had then just begun his great work for the biological school at Cambridge, and Gaskell was one of the small group of young men caught and trained by him. After taking his degree in 1869 he proceeded to University College to study medicine, and took his M.D. degree in 1878. He received the Marshall Hall prize in 1888, a Royal Society medal in 1889, and the Baily medal in 1895. He served with distinction upon the Moseley Commission and the Vivisection Commission.

Dr. Gaskell was a brilliant lecturer, perhaps the most inspiring that the Cambridge student ever had the good fortune to listen to, not excepting even Foster himself. In the quiet simplicity of his character personal pride had no place. His students found in him a personal friend, and those who know the Cambridge school will know well how strong was the affection they one and all had for him.

Correspondence.

"Audi alteram partem."

OPEN-AIR HOSPITALS IN WAR TIME.

To the Editor of THE LANCET.

SIR,—Professor Robert Saundby in his article on open-air hospitals in war time in THE LANCET of Sept. 19th makes no reference to the open-air treatment of acute specific fevers. This has been practised with much benefit to the patients, and without untoward results in any case, at the city isolation hospitals of Nottingham for nearly 20 years. Large glass-covered verandahs, 45 feet long by 20 feet wide, are attached to the permanent blocks, and upon these our patients are placed and nursed at all stages of the disease and practically in all weathers. These hospitals have been visited by numerous medical officers of health and other representatives of local authorities in recent years, and the practice of treating cases of acute specific fevers of all kinds in the open air is now slowly growing in public favour in various parts of the country.

The late Dr. H. Franklin Parsons, first assistant medical officer to the Local Government Board, paid a special visit to these hospitals in 1910, and gave a lengthy account of them and of our methods of treatment in his report to the Board in 1912. He stated in this report that he saw nothing in the course of a lengthy inspection and inquiry to cast any doubt upon the accuracy of our statements in favour of the system. Also, in his posthumous work on isolation hospitals issued in 1914 from the Cambridge University Press, he again expresses himself to the same effect, and states that the system is worthy of an extended trial.

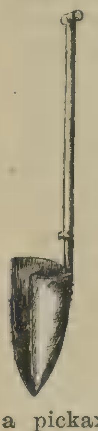
It is, in my opinion, of special importance that the advantages of open-air treatment for acute specific diseases (including small-pox, enteric fever, and dysentery) should be recognised at the present time, for if the present war continues we are likely to have a great deal of such disease to treat, and a full recognition at once of the freedom from risk and active advantage of this line of treatment for practically all classes of cases may be of the highest utility alike to the sick and the healthy. I am, Sir, yours faithfully,

Nottingham, Sept. 26th, 1914. PHILIP BOOBBYER.

MILITARY SANITATION.

To the Editor of THE LANCET.

SIR,—There is ample evidence in the crusade for antityphoid inoculation, and care as to water and soil purity in camps, that possibilities of epidemics of typhoid following embodiment of Territorials and the new army are being guarded against. Route marching, bivouacs, and manœuvres by large numbers of men, however, imply chances of soil and indirect water contamination which camp arrangements will not meet in the case of troops, whilst they especially render the civil population in areas under military occupation liable to infection. Under such conditions, the method of emergent conservancy laid down in Deut. xxiii. 12, 13, should be of utility. In peace time, the addition of a spade per company of the pattern shown in the annexed diagram should not be objectionable as an extra weight. The shaft can be made folding or removable. If the garden trowel-shaped portion of the spade be of steel with an edge, and on the shaft be arranged a projection at right angles (to enable pressure to be applied by the foot in thrusting) it should be possible, in readily penetrable soil, to make quickly numerous holes for defæcation purposes of 6 inches in diameter and 8 inches to 9 inches deep, by making two semi-circular cuts for each. If the removed soil be placed at the edge of the hole, a movement of the foot fills it in quickly after defæcation by squatting. The employment of a pickaxe or crowbar to accomplish the same work requires much time, and produces irregular results. In time of war, the use of the "entrenching tool" for this purpose might often be advantageous. If the user faces the little heaps of removed soil, even the objection to urine-borne microbes is largely met. I have used this cleanly, inodorous, and rapid method freely in the great gatherings which attend fairs and festivals in India. I am, Sir, yours faithfully,



W. G. KING,
Colonel I.M.S. (retired).

Hatch End, Middlesex, Sept. 21st, 1914.

THE WOMEN'S NATIONAL SERVICE LEAGUE HOSPITAL.

To the Editor of THE LANCET.

SIR,—On Sunday afternoon last the Women's National Service League sent a fully equipped hospital to Antwerp to help the Belgian Red Cross. Mrs. St. Clair Stobart, whose recent experience as a prisoner in the hands of the Germans has been the subject of much press comment, was in charge of the unit, which consisted of six women doctors and surgeons (Dr. Florence Stoney, Dr. H. B. Hanson, Dr. Rose Turner, Dr. Emily Morris, Dr. Joan Watts, and Dr. Mabel Ramsay), 12 fully trained nurses, cooks, orderlies, and electricians in charge of the X ray apparatus.

Sir Cecil Hertslet, British Minister at Antwerp, had sent pressing messages to Mrs. Stobart to start at once, as the wounded were daily coming in and beds and all hospital equipment were badly needed. The St. John Ambulance kindly gave every possible assistance and countenance to the unit. The hospital equipment for 130 beds was perfect in every way. Lady Cowdray had generously presented the necessary X ray apparatus. The Hampstead Garden Suburb subscribed £200 towards the equipment. Mrs. Warwick Hunt, besides fully equipping 25 beds, has made a handsome present of 166 pairs of sheets. Other generous donors are Mrs. Fagan, Mrs. Frederick Guest, and Miss Cunliffe. Sir Alfred Mond and Miss Donisthorpe are both making weekly donations towards the maintenance of the hospital, but further funds are urgently needed if we are to free the hardly pressed Belgian Red Cross of all monetary responsibility. Donations, large or small, all of which will be gratefully acknowledged, should be sent to Lady Muir-Mackenzie, Women's National Service League, 39, St. James's-street, London, S.W.

I am, Sir, yours faithfully,

Sept. 25th, 1914. THÉRÈSE MUIR-MACKENZIE.

BERMONDSEY GUARDIANS AND OUTDOOR MEDICAL RELIEF.

To the Editor of THE LANCET.

SIR,—I notice in THE LANCET of Sept. 26th an advertisement of the Bermondsey guardians for a whole-time medical officer to take the place of the old part-time district medical officers in that union, under a recent scheme sanctioned provisionally by the Local Government Board for five years. With your permission, I should like to draw the attention of intending candidates to certain drawbacks that do not appear on the face of the advertisement. This scheme has been strongly condemned (1) by the local profession, as represented by the Camberwell Division of the British Medical Association; and (2) by the Poor-law Medical Service of England and Wales, as represented by our association. Although the salary offered may appear generous as compared with some Poor-law salaries, there are conditions attached that very considerably diminish its value. Deductions proportionate to the salary have to be made under the Poor-law Officers Superannuation Act. As there is no security of tenure for the medical officer these deductions may never mature in the pension for which they are compulsorily levied. If returned on the officer's dismissal, or the determination of his office, their insurance value at all events will be entirely lost; and in the case of a young married man such a contingency ought not to be overlooked. By the Poor-law Orders medical officers of the kind advertised for are not recognised. The Poor-law Orders know only district medical officers and workhouse medical officers, medical superintendents of infirmaries being included in the latter category. Both of these classes are given security of tenure, and are not entirely at the mercy of the guardians.

At the inception of this scheme the Poor-law Medical Officers' Association approached the Local Government Board and strongly urged the equity of putting these new medical officers, who were to take the place of the old district medical officers, under the protection of the Poor-law Orders, but without success. It only remains, therefore, that all medical practitioners who accept such posts as these should at least understand fully the responsibilities they are taking upon themselves.

I am, Sir, yours faithfully,
MAJOR GREENWOOD,
Honorary Secretary, Poor-law Medical Officers' Association of England and Wales.
London, E.C., Sept. 28th, 1914.

To the Editor of THE LANCET.

SIR,—In THE LANCET of last week appears an advertisement from the parish of Bermondsey for a medical officer whose duties shall consist of "attending to the sick poor of the parish in the institutions or in their own homes under the direction of the medical superintendent of the infirmary." Might I suggest to any intending applicants to make a searching inquiry as to whether the conditions of this advertisement are applicable to the appointment of district medical officer under the Poor-law—i.e., whether the officer appointed is in reality an officer of the Poor-law at all with all the advantages of permanency of office and a prospective pension, or whether in reality he should not have been advertised for as an assistant to the medical superintendent of the infirmary, liable at the caprice of that officer or even of some member of the board of guardians to have his appointment determined at short notice without compensation of any kind whatever. I see the advertisement asks for an experienced man. Can any experienced responsible man be found capable of being tempted even by the bait of a fairly adequate salary to accept such conditions? I also see preference will be given to a married man. Will any married man be found to risk his whole future and that of his wife and family on such a doubtful speculation?

Reading the account of the meeting of the Poor-law Medical Officers' Association in the issue of the *Poor-law Officers' Journal* for Sept. 18th, p. 1229, it is there stated that the Local Government Board only gave its sanction to this appointment on a "five years' trial." This is not stated in the advertisement. Was the omission accidental? Anyhow, to intending applicants I would say, Beware! I am, Sir, yours faithfully,
Sept. 29th, 1914. D. M. O.

CHOLERA BELTS.

To the Editor of THE LANCET.

SIR,—As considerable time is at present being spent in making so-called "cholera belts" for the troops, it would be interesting to obtain the opinion of your readers as to the usefulness of these articles. In eastern climates these abdominal belts are, I believe, considered to be some protection against certain intestinal disorders, and their designation, I presume, suggests that they are even of some service in warding off cholera.

Whatever may be their usefulness under certain conditions, I feel certain that their disadvantages outweigh their advantages for troops on active service. Experience in South Africa showed that unless frequently changed, which is an impossibility for troops at the front, they soon teem with vermin. They become soaked with perspiration and rucked up during exertion and form an uncomfortable damp girdle which has a tendency to cause local chill during subsequent rest. There is, moreover, a definite danger in suddenly dispensing with such an article after becoming accustomed to its use, but the troops must often have to choose between such a course and continuing to suffer considerable local irritation and discomfort.

I am, Sir, yours faithfully,
J. COOTE HIBBERT.
Public Health Office, Blackburn, Sept. 25th, 1914.

HELICON.

To the Editor of THE LANCET.

SIR,—I am pleased to see the advertisement of "Helicon" in your issue of last week. I find that helicon and aspirin are identically the same.

Now is the time. Prescribe helicon and put money into English pockets and not aspirin and money in German pockets. This is to be a war of endurance, and the length of the purse will settle it. I am, Sir, yours faithfully,
Hove, Sept. 28th, 1914. EDWARD TREVES, M.R.C.S.Eng.

⁂ The question is not perfectly simple. Application was made this week to the Comptroller-General of Patents with regard to a company of almost entirely German personnel formed to manufacture an article in Germany, where the manufacture had been transferred to England, all labour and material being now entirely English. The Comptroller said that it was not the Government policy to close all German concerns when they were carried on for the benefit of British labour. We have received from Mr. A. Newton, the present proprietor of Pneumosan, a statement that his is a British product, only British labour being used, and that the business will be carried on henceforth under the style of The Pneumosan Company.—ED. L.

GIFT TO THE SEAMEN'S HOSPITAL SOCIETY.—Mrs. E. Spencer Stidolph has presented to the Seamen's Hospital Society the freehold property of Highbridge House, Greenwich. The building was originally a part of the Crown and Sceptre Inn, a resort of Charles Dickens.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.—At examinations held recently the following scholarships and exhibition were awarded:—Open scholarships in natural sciences: J. O'F. Fletcher, St. Mary's College, Trinidad; W. F. Francis, Berkhamsted; and H. E. Suter, Epsom College. University scholarships: J. W. G. Phillips, St. Mary's Hospital Medical School; and T. S. Evans, University College, Cardiff. University exhibition: R. A. Woodhouse, Downing College, Cambridge. Epsom college scholarship (by nomination): R. L. Walker.

COUNTY TYRONE TUBERCULOSIS COMMITTEE.—The Irish Local Government Board have advised the County Tyrone Tuberculosis Committee not to provide a large residence for their medical officer, but the committee have decided to recommend the county council to borrow £1350 to do so, the conditions being that the doctor is to pay £45 annually as rent. It was also decided to request the joint committee of Castlederg, Cookstown, and Dungannon to fall in with a suggestion that the fever cases in Cookstown Hospital should be transferred to Dungannon Fever Hospital, and that the former building should be utilised for the isolation of advanced tuberculous cases.

THE PREMIER AT PEAMOUNT SANATORIUM.—Last Saturday morning Mr. Asquith occupied the few hours at his disposal before his return to England from Dublin by a visit to Peamount, the sanatorium maintained in county Dublin by the Women's National Health Association. The Prime Minister motored to Peamount in company with their Excellencies the Lord Lieutenant and the Countess of Aberdeen. The party inspected the sanatorium, and Mr. Asquith declared a new pavilion for children open. This is the first special accommodation for children in any sanatorium in Ireland. It was reported that two male patients who had been in the reserves had so far recovered as to be able to join their regiments for active service.

THE WAR.

THE ORGANISATION OF MEDICAL SERVICE IN THE FIELD.

(Continued from p. 824.)

THE third zone of field medical administration is the *distributing zone.* Included in the line of communications are stationary hospitals, general hospitals, base medical store depôts, convalescent depôts, and ambulance trains. The stationary hospitals, two for each division, are organised for 200 beds each, but are capable of expansion. They should preferably be established in permanent buildings, if suitable ones are obtainable. General hospitals, two for each division, are established of 520 beds each, capable of expansion, and are accommodated in buildings if possible. Base depôts of medical stores are formed in the proportion of one for every two divisions. The use of convalescent depôts in connexion with general hospitals is in order to relieve pressure, so that accommodation may be always available in these latter for serious cases arriving from the front. Transport of sick and wounded from the seat of operations by railway is the best means of speedy evacuation, and is always adopted where feasible. Ambulance trains consist of special coaches built for the purpose, to convey stretcher cases, and are provided with dispensary, kitchen, pack store, &c., with corridor communication. Improvised ambulance vehicles equipped with special apparatus for conveying lying-down cases are also used. The Zavodovski method for slinging eight ordinary pattern stretchers in the usual railway van is easily practicable. Empty supply trains returning to the base are available for transport of ordinary (not severe) cases of sickness or injury. When the line of communications is long and halts or detrainings of sick or wounded are necessary, rest stations, with the means of providing medical aid, should be established.

The last stage in the transport of sick and wounded from an overseas expedition is that by means of hospital ships, one for each division of an army in the field, equipped for 220 beds, and forming a link between the base of active operations and the large military hospitals at home, where the final treatment of serious surgical and medical cases is carried out. When further active treatment is no longer required the convalescent patients are accommodated in depôts until again fit for duty, or until finally invalided. In the present campaign numerous civil hospitals have been utilised in various parts of the country, to supplement the accommodation of the military hospitals at Netley, Woolwich, in London, and elsewhere.

Attention was directed last week to the means for providing aid in the first place to the wounded; the army has its *raison d'être* in the necessity for fighting, and fighting implies liability to injury, which may be slight, or severe, or mortal. If slight, the patient returns to duty after a few days, without needing to be sent away from his unit. If mortal, the last offices are brief, the cause and date of death are recorded, and the regimental number is crossed out. If the injury is severe and the force is advancing, the man must necessarily be left at the spot or sent down the line of communications; and even if the injury is comparatively slight, if the force is advancing, the injured man must be sent back; he cannot stay where he is, and he cannot be allowed to advance unless he is fit to fight. It is frequently difficult to decide what to do with such cases. Any interference with the ability to march or shoot of course necessitates relegating the patient to hospital. In other cases it is a question between burdening the hospital accommodation and transport arrangements with trivial cases of sickness or injury, and encumbering the fighting line with an individual not absolutely fit. The idiosyncrasy of the man is the determining factor in many cases, and the regimental doctor must decide. In case of doubt as to absolute fitness, it has to be remembered that it is a less evil that the line of communications should be burdened with slight cases of illness than that the vigour of attack or stubbornness of defence should be impaired by the presence of men not physically fit.

But it is not only the wounded that fall out of the fighting line and need the care of the medical officer. Sickness may be a greater danger to the army than the bullets of the enemy. The nature of the climate and of the country, the length of the campaign, and the physical characteristics of the troops (e.g., whether they are seasoned soldiers or immature recruits) have an important bearing on the possibility of maintaining an efficient force in the field. Dysentery and enteric fever are the chief diseases to be feared, and, in warm climates, cholera. Protective inoculation is now available against cholera and enteric fever, and is being carried out as regards the latter as far as circumstances admit, though, from the shortness of the time available, it cannot have been possible to protect more than a small proportion of the troops that have proceeded on service. The sanitary organisation of the Army, laid down in general terms by the regulations and administered by the principal medical officer of the force according to the circumstances of the country and climate, is carried out in detail by the individual field units under the immediate supervision of the medical officer in charge. Combatant officers are now fully alive to the importance of taking all necessary measures for maintaining the health of their men; and although it cannot be expected that, with such large numbers exposed to the hardships and unavoidably insanitary conditions of field service, there will be an entire absence of epidemic disease, we may hope that there will be no widespread epidemic. It is certain that never before has an army left these shores so well equipped for service or under the care of a more competent, skilful, and devoted body of medical officers. Nor at any time has the importance of preserving the health of the troops, by taking the greatest care as to their feeding, clothing, and comfort, and so maintaining their efficiency, been so entirely recognised as by the military authorities in making the arrangements for the present Expeditionary Force.

THE TREATMENT OF THE WOUNDED IN THIS COUNTRY.

IN this country we are concerned with those wounded who by the operations in the evacuating zone land on our shores from the base hospitals abroad, having reached these from the clearing hospitals and stationary hospitals on the lines of communication (see THE LANCET, Sept. 26th, p. 824). Our wounded arrive at Southampton, and are distributed according to available beds from lists supplied twice weekly to the embarkation officer. The accommodation for the wounded is triple. There are, first, the Permanent Military Hospitals; there are, secondly, the base hospitals belonging to the Territorial force which come into effect on mobilisation; and there are, thirdly, the big charitable institutions of the country, the civil hospitals, whose authorities have placed a certain number of beds at the disposal of the War Office. These last institutions have in some cases become definitely attached to the Territorial Base Hospitals, as well as supplying them with their *à la suite* staffs, the beds in the civil hospitals which have been ceded to the War Office constituting a section of the respective Territorial hospitals. The Territorial Base Hospitals are technically known as "general" Territorial hospitals, a title which it must be remembered is correct, though confusing.

The Permanent Military Hospitals are in association with the various commands. Thus the Aldershot Command is served by the Cambridge Hospital and the Connaught Hospital, each having about 500 beds, and there is also a small isolation hospital. The Eastern Command has four hospitals, one at Colchester, one at Chatham, one at Warley, and one at Woolwich. Of these the Royal Herbert Hospital at Woolwich contains over 600 beds and Colchester over 200. In the Southern Command there are five hospitals, among them being the principal military hospital in the country, Netley, which will hold 1200 patients at all times, and which can easily take 800 more in temporary buildings on the grounds. There are also the Devonport hospital, 250 beds, that at Tidworth, 150, and that at Portsmouth (Cosham), 200. At Netley a Red Cross hospital of 500 beds is now under construction. We need not enumerate the other military hospitals whose locality is indicated in the Army List by the addresses of the various divisions in each command. They are staffed by the Army Medical Service. The aggregate number of beds in these hospitals in England and Wales is nearly 6000; there are 1000 beds in Ireland, and about a quarter of that number in Scotland. These hospitals form the first accommodation for the wounded in this country during war, while in peace time they have the responsibility of caring for the health of the army.

The Territorial Base Hospitals form the second accommodation. They only come into existence upon mobilisation. They each possess a peace establishment of three officers, colonel, major, and quartermaster, and 43 others, and an *à la suite* staff comprised, as a rule, of the medical staff of a great hospital or infirmary in the neighbourhood, in some cases reinforced by specialists. They are nursed by the Territorial Nursing Service under an Advisory Council, with the aid of the St. John Ambulance Association and the British Red Cross. Of the *à la suite* staff 18 are called up on mobilisation, and of these, at any rate in the case of some of the London base hospitals, 4 captains are definitely resident medical officers, the principle of the rota not being adopted. The Territorial Base Hospitals were designed to receive patients from the Territorial army, and are like the hospitals of the Expeditionary Force at the rate of two for each division; but although mobilised primarily for this purpose they will be, and in some cases are now being, used to receive the wounded from the Expeditionary Force. The big civil hospitals which have placed beds at the disposal of the War Office are in most cases associated with these Territorial hospitals, and form the third accommodation for the wounded.

To return to the story of the wounded men. These having been collected as far as possible in accordance with the routine indicated by the orders for medical service in the field, are brought to Southampton and there distributed by the embarkation officer. Undoubtedly the most serious ones in the first instance have been kept at Netley. Of the rest some have been sent to other Permanent Military Hospitals, some to Territorial Base Hospitals, and some to one of the civil general hospitals whose beds are regarded as sections of the latter. From these hospitals they are in due course drafted into some of the many convalescent homes which have been placed at the disposal of the Government. As time goes on the probability is that more and more of the wounded will find their way into the Permanent Military Hospitals and Territorial Base Hospitals, as it is felt on all hands that it is not safe to surrender beds in the civil hospitals which may at any moment be wanted for the ordinary sick population. There is no reason to suppose that there will be less demand than usual on these beds, but the use of the permanent hospitals was in the first instance necessitated by the fact that the Territorial hospitals were not expected to be in existence until some short time after mobilisation of the Territorial Army.

These Territorial Base Hospitals are part of the organisation of the Territorial Force, or Second Line in our Army. As they were only to be called into being on mobilisation of the Territorials to minister to the wants of that force it was needless and would have been extravagant to fit up and maintain as going concerns institutions, of which there are 23 in Great Britain and Ireland, each with a complement of 520 beds, merely to await events. The primary steps which could be taken, however, were indicated.

The organisation of the Territorial Force is in the hands of County Associations, created *ad hoc*, consisting of the Lord Lieutenant of the county or other person selected by the Army Council, as president, and representative officers of all arms of the force, of county and borough councils, of universities, of employers and employed, and of coöpted members. This body supplies all requirements on mobilisation of the force, and is supposed to take note beforehand of what those requirements would probably signify.

Each Territorial Base Hospital has to house besides its complement of 520 patients a personnel of 112 officers and other ranks and 91 nursing staff, so that it may be imagined that to adapt buildings not designed for hospital purposes has been a huge task. An example drawn from one hospital will show what transformation may mean. The task was a stiff one, and it has been put through here with quickness and efficiency whether or no in accordance with any prearranged schemes or estimates.

The buildings selected were St. Gabriel's Training College and a Board School standing next it; the latter in the usual large asphalted playground, the former having about half an acre of garden in front of it. On taking over the premises from the college and school authorities the accommodation was roughly divided in accordance with the comparative size of the buildings by preparing a little over 200 beds in the college and a little over 300 in the school. Ways were made through the walls dividing the grounds. A great part of the internal structure of both buildings was immediately removed—cubicles, partitions, and educational fitments all disappeared, with the result that in each building there are now large airy wards holding from 20 to 30 beds, and smaller wards holding 10 or 15 beds. In this way the requisite accommodation for the patients was obtained, and the wards are very bright in appearance and perfectly fitted for their purpose. Next each building had to undergo complete sanitary rearrangement, and this was done partly by use of space acquired by removing the old appurtenances and divisions, but largely by the building on of sanitary annexes connected with the different floors. In this way a copious supply of bathrooms, sinks, special sinks for the emptying of bed-pans, and water-closets has been obtained. The Training College possessed an assembly or recreation hall in the grounds at the back, and this has been transformed into a very large ward, a lean-to annex supplying complete lavatory and sanitary accommodation having been added.

Similarly the cooking arrangements had to be entirely reorganised. The college was fortunate in possessing a large kitchen, an unusually spacious, well-planned room, and into this it was found possible to put new ranges, a large steaming apparatus, and all the appliances for dealing with not only the meals of the patients, but with the sergeants' mess, and to a certain extent with the officers' mess. A separate room was transformed into a kitchen for the nurses, while space was found for yet a third kitchen on an upper floor to further serve the officers' mess.

There has been nearly as much new construction as transformation, and some of the additions, notably the lifts and the annexes to the college, have involved serious constructional work, and have called of course for great alterations in water-supply and in lighting. Precautions for fire, of course, necessitated a change in water-supply. Both buildings were fortunately found to be adequately supplied with radiators.

The officers' quarters are situated in the college, and comprise a very small mess-room and bedrooms for the medical staff, and 20 beds for the use of sick officers. On the top floor of the college there is an excellently appointed operation theatre, X ray room, and a ward of seven or eight beds for the immediate use of patients who have been operated upon. In the basement of the college a chemical laboratory, which formed part of the original training equipment, has been easily turned into an excellent dispensary, and a small botanical laboratory next to it has become the bacteriological laboratory of the hospital. The Training College is finished, and the work in the Board School is so far forward that it is nearly ready to receive its complement of wounded.

The numerous new buildings in the roomy school yard for the use of the convalescent patients and of the personnel of the hospital have been erected with the completeness of the transformed main buildings. There is a large convalescent "dining hut" where the convalescent patients are to have their meals. Another large hut has been built for the quarters of the personnel, and contains a dormitory holding about 90 beds, and a mess-room with a small canteen for the men, a bedroom and messroom for the sergeants, with washing-places and baths. A covered way has been made between the buildings of the school and the college. A complete kitchen fitted with gas stoves occupies another building and serves the men's mess and the 300 beds in the school. A disinfector and a large steriliser have been erected in outbuildings, and an incinerator for the destruction of rubbish has been built. Other outbuildings in the yard comprise in addition to a guard room and store rooms of various kinds a mortuary and post-mortem room. An isolated permanent building forming part of the school, and used for defective children, has been altered to form an infectious block and is divided into two parts, so that separate infections may be dealt with.

The work that has been done here in transforming two civil buildings suddenly into a hospital capable of dealing with the medical and surgical wants of 520 persons with a personnel all told of about 200 has been very great. Taking it as typical of the kind of thing that during the last six weeks has been undertaken on all sides, we find in such work a satisfactory promise that the sick and wounded cases that reach, or occur in, this country will be well and promptly dealt with.

PROFESSOR BOSSI'S REBUKE TO GERMANY.

Professor L. M. Bossi, director of the Gynæcological Institute of the University of Genoa, has sent the following letter to the *Corpus Academicum* of the University of Leipzig and has furnished a copy of it to Emeritus Professor Sir Alexander R. Simpson, formerly professor of midwifery in the University of Edinburgh, who has been good enough to forward it to us for publication.

ESTEEMED COLLEAGUES OF THE UNIVERSITY OF LEIPZIG,—I received a copy of the special number of the *Leipziger Neuesten Nachrichten* accompanied by a letter which invites me to communicate to the University students and to the press of my country the contents of that journal with respect to the responsibility for this ruthless war. Then I read to-day the official notice that the Ministers of Public Instruction of the various German States have "by common agreement" forbidden the German universities to admit from this time forward as students Russians, Serbs, and Japanese. Thus, while on the one hand German university authorities rely on the principle of the internationalism of science for the defence of their own political position, they commit an act of university reprisal in striking opposition to that principle. The contrast of these two actions at the expense of the prestige of science and of the dignity of its cultivators is too evident to require any further comment; but it obliges me to break the silence which I had imposed on myself, and to open my mind to you with loyalty and frankness, as I hold that to be now a duty imposed on me by my position as a university professor.

Science has no confines; its country is the world. If this principle had been present to your mind, my esteemed colleagues of the University of Leipzig, I am sure that you would have avoided any attempt to implicate your colleagues of the Italian universities in a conflict of brute force, from which science and its cultivators ought to remain entirely aloof, in order to preserve, in the midst of the present unexpected return to barbarism, at least one patrimony of mankind pure and unspotted—that of the intellect.

But, since you have attempted to invade this field also, it is my bounden duty to reply to you that while we were such admirers of your advances in the immense fields of the positive sciences and of your scientific method as to recognise almost at a glance a true and peculiar hegemony of your nation, we cannot admire, much less approve, the horrible fact that has to-day come unexpectedly to light—emerging in all its terrific concrete reality—of the premeditated concentration of a great part of the scientific and intellectual energies of your nation to bring about the triumph in the world of the dominion of brute force.

In our academies we shall teach our studious youth the great benefits that all mankind have derived from the experimental method of science, which, initiated in Italy, received its largest development and reached its highest prestige in Germany. They will learn that the Latin peoples have owed much to the applications of disciplined German method in all spheres of life and in all branches of human knowledge. They will learn that the Latin genius has been largely assisted in its positive manifestations by the practical methodicalness of Germany; that Germany has contributed perhaps more than other nations to the application and the diffusion of Italian scientific initiative (a fact which I also am personally bound to affirm), and that for this we ought to retain gratitude.

But faithful always to the great principle that the prosperity and happiness of the peoples can be founded only upon human brotherhood, we shall not be able to approve:

1. The incitements to the use and abuse of violence and of brute force which your Chancellor gave in full *Reichstag* with a cynicism which revolted the consciences—in your opinion perhaps too sentimental—of us Latins.
2. That for years peace is preached, while human slaughter is being prepared instead, and while even the hospitality of many European centres is being sterilised by the preparation there of arms and of nuclei of men ready for treachery.
3. That—an example almost unique in the modern history of the peoples—International Treaties are trampled on, and such neutral States as Luxemburg and Belgium are invaded; unarmed peoples, destined by the law of nations exclusively to peace and to labour, being attacked unexpectedly and with unheard-of and (as the facts will demonstrate inexorably) premeditated violence.
4. That villages and also cities of such neutral States are burned and destroyed, without any respect either to the rights of property or to patrimony sacred to art and to civilisation.
5. That open and tranquil cities are bombarded at night, without any respect to the inviolability of the asylums of the infirm.
6. That unarmed citizens are slain, solely because bound by affection to their native land.

It is a civilisation wholly different from this that we feel it to be our duty to teach in our universities and to our studious youth, who from the very fact of our absolute neutrality, imposed by our people and approved by their present government, will learn that Italy desires the restoration of a civilisation of scientific and social progress founded not in the dominion of violence but of human solidarity in the brotherhood of the nations.

(Signed) Prof. L. M. BOSSI,
Genoa, Sept. 10th, 1914. of the Royal University of Genoa.

Prof. Bossi, in a covering letter to Sir Alexander Simpson, says: "Our science, which has for its object the physical and psychical maintenance and amelioration of the human race, cannot remain indifferent to the terrible tragedy that is being enacted. I believe it to be our duty to protest against the erection of brutal force into a system of domination predestined to the physical and moral ruin of the peoples. The letter which I have sent to the professors of Leipzig represents, I am convinced, the sentiments of the majority of my colleagues in Italy."

MEDICAL CASUALTIES AT THE FRONT.

The following additional casualties to officers of the Royal Army Medical Corps on active service have been reported:—

Killed: Lieutenant Herbert Leslie Hopkins, Lieutenant John Forbes O'Connell, and Lieutenant James Laidlaw Huggan. Lieutenant-Colonel Charles Dalton and Captain Henry Sherwood Ranken are reported to have died of wounds. *Wounded:* Captain B. H. V. Dunbar, Lieutenant R. Fisher, and Captain C. T. Edmunds and Lieutenant E. R. Walker, who were previously reported missing. *Missing:* Captain S. Field, Captain M. P. Leahy, Captain G. H. Stevenson, and Captain C. W. Holden, who was previously reported wounded.

The following officers previously reported missing are now unofficially reported prisoners of war:—Major J. H. Brunskill, Captain E. S. B. Hamilton, Lieutenant A. J. Brown, Lieutenant H. W. Hills.

The following officers previously reported missing have since rejoined: Captain H. C. Hildreth, Lieutenant J. H. Bell, and Lieutenant F. H. Tulloch.

MISUSE OF THE RED CROSS.

The War Office has issued the following warning this week:

> In view of the large number of cases where the Red Cross is being improperly used by persons presumably ignorant of the statutory prohibition of such use, the public are warned that, under the Geneva Convention Act, 1911, it is not lawful for any person to use for the purposes of his trade or business the emblem of the Red Cross on a white ground or the words "Red Cross" or "Geneva Cross." Any person acting in contravention of this provision is guilty of an offence against the Act, and liable on summary conviction to a fine not exceeding £10 and to forfeit any goods upon or in connexion with which the emblem or words are used.

The Act in question is the legislative measure agreed to by each of the Governments participating in the Geneva Convention of July 6th, 1906.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE POSITION OF STUDENTS.

AT an extraordinary Comitia, held on Sept. 24th, Sir Thomas Barlow, Bart., K.C.V.O., the President, being in the chair, a report, dated August 14th, was received from the Committee of Management referring to the decision to hold an additional final examination commencing on Sept. 8th, and to the special conditions which applied to the candidates entering for the examination. The Committee of Management also successfully recommended the adoption of the following temporary regulations, viz.:—

1. That time spent as assistant on active service in one of His Majesty's ships or in a naval or military hospital or any hospital utilised by the naval and military authorities not exceeding six months be allowed to count for the equivalent period of medical and surgical hospital practice and for three months each of the required period of medical clinical clerkship and surgical dressership, provided that a satisfactory certificate is produced from the principal medical officer under whom the assistant serves.
2. That medical clinical clerkships and surgical dresserships served before second examination in anatomy and physiology has been passed be recognised.

THE CARE OF THE SICK AND WOUNDED ON THE CONTINENT.

The Order of St. John of Jerusalem is prepared to receive further applications from surgeons who are anxious to help in the treatment of the sick and wounded in temporary hospitals on the continent. Applications for particulars of service may be made to St. John's Gate, Clerkenwell, London, E.C., to Mr. H. T. Watson, or to the chief surgeon of the Brigade, Mr. Edmund Owen, 24, Upper Berkeley-street, Portman-square. W.

Sir Anthony A. Bowlby, C.M.G., surgeon to St. Bartholomew's Hospital, has gone to France, at the request of the War Office, to join the staff of the principal medical officer of the British Expeditionary Force as consulting surgeon.

PROTECTIVE TREATMENT AGAINST TYPHOID FEVER.—The Research Defence Society has issued a popular leaflet explaining the great value of this treatment. It has also arranged for the treatment to be given, to anybody desiring it, at the society's office. Supplies of the leaflet can be had on application to the honorary secretary, 21, Ladbroke-square, London, W. Telephone 975 Park.

THE WOMEN OF CANADA AND THE WAR.—H.R.H. the Duchess of Connaught has announced the collection by the women of Canada of over £57,000 for the use of the British War Office and the Admiralty. Of this amount £37,000 will be handed over to the Admiralty for the establishment of a Naval Hospital at Portsmouth. The balance of £20,000 will be placed at the disposal of Lord Kitchener.

THE FIFTH SOUTHERN TERRITORIAL HOSPITAL.—This general hospital is established in a council secondary school in Fawcett-road, Southsea, near Fratton Station on the London and South-Western Railway, from which the sick and wounded arriving from Southampton are easily brought to the hospital. The following physicians and surgeons form the staff:—Lieutenant-Colonels: John Kyffin (in command), C. P. Childe, and C. F. Routh. Majors: E. J. Davis-Taylor (permanent personnel), T. A. Munro Forde, John Phillips, C. A. Scott Ridout, and R. A. Dove. Captains: H. B. T. Morgan (permanent personnel), Harold Burrows, W. P. McEldowney, P. H. Green, J. L. Wright, C. Lamplough, W. Carling, H. L. Driver, S. Goss, J. Blackwood, M. H. Way, and M. Dale Wood. There are in this hospital at present about 320 British wounded and sick, the number varying daily as men are discharged to their depôts as fit for duty. There are 95 Germans, mostly cases of serious wounds, and five German officers, including three doctors. The Germans are being treated exactly as our own men, except that they are not allowed to write or receive letters. Their behaviour is good. Few of them seem to have any idea of the real state of affairs so far as the war is concerned. The experiences of a hospital are mostly grave, but an amusing incident occurred lately. A German was ordered medicine. Fearing it was poisoned he insisted that the nurse should take a dose before he would do so. Four deaths have taken place, two from acute tetanus, one from encephalitis consequent on hernia cerebri, and one from pneumonia. The nurses have undergone antityphoid inoculation.

CANADA'S GIFT TO THE RED CROSS.—The Dominion Government of Canada, Ottawa, has transmitted the sum of £10,068 9*s.* 10*d.* from the Canadian Red Cross branch to the funds of the British Red Cross Society, and Queen Alexandra has sent by cable a message of warm appreciation for this munificent contribution to the funds of the society.

EDINBURGH IN WAR TIME.—Our Edinburgh correspondent writes: A number of wounded soldiers arrived in Edinburgh in the early morning of Sept. 28th, and were conveyed by motor ambulances to Craigleith Hospital. At a meeting held in Edinburgh on Sept. 19th, at the residence of Lord Kinross, the chairman, a committee was formed for the purpose of dealing with the Belgian refugees in Edinburgh and district. Among those who attended the meeting were the Marchioness of Bute, Dr. Sarolea, Belgian Consul in Edinburgh, Mr. Campbell Gibson, Belgian Consul in Leith, and a number of representative citizens. Lady Bute intimated that she had interviewed Belgian Government officials in London, and arrangements had been come to authorising Mr. Campbell Gibson to divide parts of the proceeds of funds being raised towards the maintenance and housing of any refugees who may come to this district. It was also intimated that a number of private individuals were prepared to receive a certain number of refugees into their homes, and a certain institution had offered to accommodate the refugees until they had been allocated to private houses. The first relay of refugees are expected to arrive in Edinburgh this week. Recruiting has gone on very briskly in Edinburgh, and still continues, the numbers joining being steadily maintained. The committee of the Edinburgh Lying-in Institution, 58, Lauriston-place, have decided to give medical attendance and nursing gratuitously to the wives of soldiers and reservists at their own homes during the continuance of the war.

NORTH TYRONE ULSTER VOLUNTEER HOSPITAL FOR FRANCE.—Our Belfast correspondent writes: A North Tyrone Ulster Volunteer Force Hospital has been accepted for service at Pau by the French Government, and will leave as soon as its equipment can be completed. The French Government will support the hospital when established at Pau, but the cost of equipment and transport have to be raised. Several Irish medical men have volunteered to the War Office to give their services at the front, but the reply so far has been that they are not required. The principle of bringing home all the wounded who are fit to travel may make the need of doctors or nurses at the front much less, but there must be a great deal of work to do.

AMERICAN WOMEN'S HOSPITAL AT PAIGNTON.—Mr. Paris Singer has placed his residence, Oldway House, Paignton, at the disposal of the executive committee of the American Women's War Relief Fund, and it has been fitted up as a hospital, with operating theatre, &c., for the treatment of wounded sailors and soldiers of any nationality. It will accommodate 200 patients, and 70 more beds can be added if required. The largest ward contains 67 beds, and was formerly the banqueting hall. The hospital has been accepted by the War Office and is being worked by the British Red Cross Society, and is now ready for the reception of patients. The hospital staff is as follows: Principal medical officer, Mr. J. Ernest Lane; consulting physician, Sir W. Osler; honorary physicians, Dr. A. E. Carver and Dr. W. W. Stabb; honorary surgeons, Sir R. Hampden Smith and Dr. Lawrence H. Bennett; dental surgeon, Mr. G. K. Mallory; radiographer, Mr. W. H. Steele; anæsthetists, Mr. F. T. Frampton and Mr. H. C. Adams; resident medical officer, Mr. Rupert Farrant.

THE Devon Volunteer Aid Organisation has fitted up the Episcopal Modern School for Girls at Exeter as a hospital. It contains 90 beds, and this number can be increased to 110 if necessary. The building has an operating theatre, dispensary, &c. The officers and staff have been appointed, and these include Mr. Worthington as commandant and Dr. J. S. S. Perkins and Mr. G. Adkins as medical officers.

THE BRITISH RED CROSS.—Mr. Percy Sargent, surgeon to out-patients at St. Thomas's Hospital, has gone to Rouen to take charge of the surgical division of the British Red Cross Hospital in that city. The other medical officers attached to the Red Cross unit at Rouen are Dr. F. J. Barker, Dr. A. M. Ware, Mr. A. G. Hebblethwaite, and Dr. C. R. Howard.—The society has accepted the offer of the use of 50 beds at the Cancer Hospital, Fulham-road, S.W.

A SUM of £460, contributed by the employees of Messrs. Siemens Brothers and Company at Woolwich works, has been handed to the Mayor of Woolwich for the Prince of Wales's Fund.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—As the result of the special examination held on account of the war the Royal College of Physicians and the Royal College of Surgeons at their meetings on Sept. 24th conferred diplomas of L.R.C.P. and M.R.C.S. upon 122 candidates (including eight ladies) who have completed the Final Examination and have complied with the respective by-laws. The names and medical schools of the successful candidates will be published later.

PRESENTATION TO CRAIGLEITH HOSPITAL.—Through the kindness of Mr. William Guy, surgeon in charge of the dental department of the hospital, a complete dental equipment has been furnished to Craigleith Hospital, Edinburgh.

TO BELGIAN MEDICAL MEN.—Medical men among the Belgian refugees who can speak French, Flemish, and English are requested to communicate with the Belgian Relief Committee, 10, Finsbury-square, E.C., as their services are much needed at the various hostels.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London.
Germany and the Next War. By General Friedrich von Bernhardi. Translated by Allen H. Powles. Price 2*s.* net.

BAILLIÈRE, TINDALL, AND COX, London.
The Intensive Treatment of Syphilis and Locomotor Ataxia by Aachen Methods. By Reginald Hayes, M.R.C.S. Price 3*s.* 6*d.* net.
Cane Sugar and Heart Disease. By Arthur Goulston, M.A., M.D. Cantab. Price 5*s.* net.
Physiological Principles in Treatment. By W. Langdon Brown, M.A., M.D. Cantab., F.R.C.P. Third edition. Price 5*s.* net.

Dulau and Co., London.

Eugenics Laboratory. Memoirs XIX. and XX. Report of the English Birth-rate. Part 1, England North of the Humber. By Ethel M. Elderton. Two diagrams, 20 plates. Price 9*s*. net.

Headley Bros., Bishopsgate, E.C.

Transactions of the Hunterian Society, 1910–1914. Sessions 92–95.

Heinemann, William, London.

A Clinical Study of the Serous and Purulent Diseases of the Labyrinth. By Dr. Erich Ruttin (Vienna). With a Foreword by Professor Dr. V. Urbantschitsch. Authorised translation by Horace Newhart, A.B., M.D., Instructor in Otology, University of Minnesota. Price 8*s*. 6*d*. net.

King, P. S., and Son, London.

Industrial Training, with Special Reference to the Conditions Prevailing in London. By N. B. Dearle, Shaw Research Student of the London School of Economics and Political Science. Price 10*s*. 6*d*. net.

Laurie, T. Werner, London.

A War Cookery-book for the Sick and Wounded. Compiled from the Cookery-books of Mrs. Edwards, Miss Little, &c., by Jessie M. Laurie. Price 6*d*. net.

An A.B.C. Guide to the Great War (Countries, Persons, and Armies Concerned in the Present War). Compiled by Edmund B. D'Auvergne. Price, with map, 1*s*.

The Siege of Liège, a Personal Narrative. By Paul Hamelius Dr. Phil., Professor of English Literature in the University of Liège. Price 1*s*. net.

Longmans, Green, and Co., London.

Methods of Quantitative Organic Analysis. By P. C. R. Kingscott, D.I.C., A.R.C.Sc., A.I.C., B.Sc. Lond., and R. S. G. Knight, D.I.C., A.R.C.Sc., A.I.C., B.Sc. Lond., Carnegie Research Scholar, Price 6*s*. 6*d*. net.

Methuen and Co., Limited, London.

Nursing in Wartime. By M. N. Oxford, formerly sister at Guy's Hospital. Price 1*s*. net.

Paton, J. and J., 143, Cannon-street, E.C.

Paton's List of Schools and Tutors. 1914–15. Price 2*s*.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Ainslie, W., M.D. Aberd., F.R.C.S. Edin., has been appointed Surgeon at the Queen Alexandra Memorial Hospital.

Beaumont, A. R., L.R.C.P. Lond., F.R.C.S. Edin., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Uppingham District of the county of Rutland.

Guillaume, Ida Margaret, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Resident House Surgeon at the Mansfield Hospital, Nottingham.

Hichens, W., M.R.C.S., L.R.C.P. Lond., has been reappointed Medical Officer to the Redruth Workhouse Infirmary.

Killen, S. J., M.D. R.U.I., D.P.H. Camb., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Carrickfergus District of the county of Antrim.

Lewis, Edward, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer under the Mental Deficiency Act to the Glamorganshire County Council.

Minkley, H. R., M.B. Lond., has been appointed Assistant School Medical Officer to the Reading Educational Authority.

Sinclair, J. J., M.B., Ch.B. Glasg., has been appointed Assistant Medical Officer of Health and Assistant School Medical Officer by the Southend Corporation.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

Ashton-under-Lyne District Infirmary and Children's Hospital.—Senior House Surgeon. Salary £140 per annum, with board, residence, and laundry.

Aylesbury, Royal Buckinghamshire Hospital.—House Surgeon, unmarried. Salary £150 per annum, with board, washing, and lodging.

Banbury, Horton Infirmary.—House Surgeon. Salary £120 per annum, with board and residence.

Barnstaple, North Devon Infirmary.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Belgrave Hospital for Children, Clapham-road, S.W.—Assistant Physician.

Birkenhead Borough Hospital.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birmingham Union.—Dudley-road Infirmary: Third Assistant Medical Officer and Fourth Assistant Medical Officer. Salary at rate of £170 and £160 per annum respectively. Selly Oak Infirmary: Assistant Medical Officer. Salary at rate of £160 per annum. Apartments, rations, laundry, and attendance in each case.

Blackburn Infectious Diseases Hospital.—Temporary Resident Medical Officer. Salary £200 per annum, with board and residence.

Bootle County Borough Hospital for Infectious Diseases.—Resident Medical Officer, unmarried. Salary £150 per annum, with board, washing, and apartments.

Bournemouth, Royal Victoria and West Hants Hospital.—House Surgeon, unmarried, for six months. Salary £100 per annum and extras, with board, lodging and washing.

Bradford Royal Eye and Ear Hospital.—House Surgeon. Salary £200 per annum.

Bradford Royal Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing. Also Resident Surgical Officer, unmarried. Salary £150 per annum, with board and residence.

Brentford Union Infirmary, Warkworth House, and Schools, Isleworth, W.—First and Second Assistant Medical Superintendent, unmarried. Salaries £225 and £200 per annum respectively, with usual residential emoluments.

Bristol City Asylum, Fishponds.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

Bristol General Hospital.—First House Physician, Second House Physician, House Surgeon, and Casualty House Surgeon for six months. Salary at rate of £120 per annum, with board, residence, &c.

Brookwood, Surrey County Asylum.—Temporary Assistant Medical Officer. Salary at rate of 5 guineas per week.

Burnley, Victoria Hospital.—Second House Surgeon. Salary £135 per annum, with residence, board, and washing.

Bury St. Edmunds, West Suffolk General Hospital.—Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and laundry.

Camberwell Infirmary, Brunswick-square, Camberwell.—Assistant Medical Officer. Salary £190 per annum. Also Assistant Medical Officer for six months for Infirmary, Brunswick-square, Camberwell, and Gordon-road Institution, Peckham. Salary at rate of £200 per annum. Also Junior Assistant Medical Officer for six months. Salary at rate of £180 per annum. Apartments, board, and washing in each case.

Cancer Hospital, Fulham-road, S.W.—Surgical Registrar. Salary £100 per annum.

Canterbury, Kent County Asylum, Chartham.—Junior Assistant Third Medical Officer, unmarried. Salary £250 per annum, with quarters, board, washing, &c.

Capetown, Corporation of the City of.—Assistant Medical Officer of Health. Salary £600 per annum.

Cardiff and County Public Health Laboratory.—Bacteriologist. Salary £200 per annum.

Cardiff City Mental Hospital, Whitchurch, near Cardiff.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, and all found.

Cheddleton, Leek, Staffordshire County Mental Hospital.—Assistant Medical Officer. Salary £270 per annum, with quarters, board, attendance, and washing.

Cheltenham General Hospital.—House Physician and House Surgeon, unmarried. Salary £100 per annum each, with board, lodging, and washing.

Chelsea Hospital for Women, Fulham-road, S.W.—Clinical Assistants.

Chesterfield and North Derbyshire Hospital.—Senior House Surgeon. Salary £120 per annum, with board, apartments, and laundry.

Colchester, Essex County Hospital.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Derby, Derbyshire Hospital for Sick Children.—Female Resident Medical Officer. Salary £100 per annum.

Evelina Hospital for Sick Children, Southwark, S.E.—House Physician for three months. Salary at rate of £75 per annum, with board, residence, and washing.

Exeter, Royal Devon and Exeter Hospital.—Assistant House Surgeon for six months. Salary at rate of £200 per annum, with board, apartments, and washing.

Florence Nightingale Hospital for Gentlewomen, 19, Lisson-grove, N.W.—Non-Resident Medical Officer. Salary £120 per annum.

Gellygaer Urban District Council.—Temporary Medical Officer of Health. Salary as Medical Officer at rate of £350 per annum, and as Medical Attendant at Isolation Hospital at rate of £50 per annum.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £140 per annum, with board, lodging, and washing.

Halifax Royal Infirmary.—Second and Third House Surgeons, both unmarried. Salaries £120 and £100 per annum respectively, with residence, board, and washing.

Hartlepool, Hartlepools Hospital.—House Surgeon. Salary £125 per annum, with board, washing, and lodging.

Hastings, East Sussex Hospital.—House Surgeon. Salary at rate of £100 per annum, with residence, board, and washing.

Hospital for Consumption and Diseases of the Chest, Brompton.—House Physician for six months. Salary £5 5*s*. per month.

Huddersfield Royal Infirmary.—Assistant House Surgeon. Salary £80 per annum, with board, rooms, and washing.

Hull Royal Infirmary.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Honorary Surgeon.

Leicester Royal Infirmary.—Resident House Surgeons and Assistant House Surgeons.

Leicestershire and Rutland Mental Hospital, Narborough, near Leicester.—Junior Medical Officer. Salary £200 per annum, with board, lodging, and washing.

Lincoln County Hospital.—Junior House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, residence, and washing.

Liverpool. Royal Southern Hospital.—House Physician and House Surgeon for six months. Salary at rate of £60 per annum, with board and residence.

London County Asylum, Claybury, Woodford Bridge, Essex.—Fifth and Sixth Assistant Medical Officers, unmarried. Salaries £200 per annum, with board, apartments, and washing.

Lowestoft and North Suffolk Hospital.—Female House Surgeon, unmarried. Salary at rate of £120 per annum, with board, residence, and laundry.

Maidstone, West Kent General Hospital.—Assistant House Surgeon, unmarried. Salary £100 per annum, with board, lodging, &c.

Manchester, City of.—Assistant Tuberculosis Officer. Salary £350 per annum.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester, Monsall Fever Hospital.—Third and Fourth Medical Assistants. Salary £150 per annum each, with board, lodgings, and washing.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester Royal Eye Hospital.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

Margate, Royal Sea Bathing Hospital for Surgical Tuberculosis.—Resident Surgeon. Salary at rate of £150 per annum, with board, residence, and laundry.

Metropolitan Hospital, Kingsland-road, N.E.—House Physician and House Surgeon. Salary at rate of £60 per annum, with board and washing. Also Assistant House Physician and Assistant House Surgeon. Salary at rate of £40 per annum, with board and washing. All for six months. Also Pathologist and Registrar. Salary at rate of £120 per annum. Also Temporary Assistant Surgeon.

Newcastle-upon-Tyne Hospital for Sick Children.—Senior Medical Officer and Junior Medical Officer for six months. Salary £100 and £80 per annum respectively, with board, lodging, and laundry.

Newcastle-upon-Tyne Poor-law Institution.—Female Second Assistant Resident Medical Officer, unmarried. Salary at rate of £150 per annum, with apartments, rations, and washing.

Newport (Mon.), Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

Nottingham City Education Committee.—Third Medical Inspector. Salary £300 per annum.

Nottingham General Hospital.—Assistant House Physician and Assistant House Surgeon for six months. Salary at rate of £100 per annum each, with board, residence, and laundry. Also Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

Otago University, New Zealand.—Professor of Clinical Pathology. Salary £600 per annum.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

Ramsgate General Hospital and Dispensary.—Resident House Surgeon, unmarried. Salary £120 per annum, with board, residence, and laundry.

Rochester, St. Bartholomew's Hospital.—Resident House Physician for six months. Salary at rate of £110 per annum, with board, residence, and laundry.

Rotherham Hospital.—Assistant House Surgeon. Salary £110 per annum, with board, lodging, and washing.

Royal Ear Hospital, Dean-street, Soho, W.—Honorary Assistant Anæsthetist on Tuesday afternoons and Thursday mornings.

Royal Free Hospital, Gray's Inn-road, W.C.—Male and Female House Physicians and House Surgeons for six months. Also Junior Obstetric Assistant for six months. Board, lodging, and washing provided in each case. Also Two Acting Assistant Surgeons.

Royal London Ophthalmic Hospital, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 per annum, with board and residence.

Royal Waterloo Hospital for Children and Women, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

Ryde, Royal Isle of Wight County Hospital.—Resident House Surgeon, unmarried. Salary £115 per annum.

St. Mary's Hospital for Women and Children, Plaistow, E.—Female Resident Medical Officer and Female Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

St. Pancras South Infirmary, Cook's-terrace, Pancras-road.—Senior Assistant Medical Superintendent, &c. Salary at rate of £175 per annum, with board and apartments.

Salford Royal Hospital.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

Salisbury (General) Infirmary.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

Samaritan Free Hospital for Women, Marylebone-road, N.W.—Assistant Surgical Registrar for six months.

Scarborough Hospital and Dispensary.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

Sheffield Children's Hospital.—House Surgeon. Salary £150 per annum, with board and residence. Also House Surgeon at East End Hospital (Out-patient Department only). Salary £120 per annum, with board and residence.

Sheffield Royal Infirmary.—Two House Surgeons and Assistant House Physician. Salary £100 per annum, with board and residence.

Shoreditch Infirmary, Hoxton-street, N.—Junior Assistant Medical Officer for six months. Salary £150 per annum, with board, apartments, and washing.

Southampton, County Borough of.—Temporary Assistant Medical Officer of Health. Salary £200 per annum, with residence, board, and washing

Southampton Free Eye Hospital.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

Stoke-on-Trent, North Staffordshire Infirmary, Hartshill.—House Surgeon, unmarried. Salary at rate of £120 per annum, with board, residence, and washing

Sunderland Royal Infirmary.—House Physician. Salary £120 per annum, with board, residence, and laundry.

Swansea General and Eye Hospital.—House Surgeon. Salary £125 per annum, with board, washing, and attendance.

Swansea Union.—Resident Assistant Medical Officer. Salary about £295 per annum.

Taunton, Taunton and Somerset Hospital.—Senior House Surgeon and Assistant House Surgeon. Salaries £120 and £80 per annum respectively, with board, lodging, and laundry.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

Ventnor, Royal National Hospital for Consumption and Diseases of the Chest on the Separate Principle.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and washing allowance.

Wakefield, West Riding Asylum.—Assistant Medical Officer. Salary £200 per annum, with apartments, board, washing, and attendance. Also Locum Tenens Assistant Medical Officer. Salary as arranged, with apartments, board, and travelling expenses.

Walsall and District Hospital.—Senior House Surgeon. Salary £150 per annum, with board, residence, and laundry.

Warrington Infirmary and Dispensary.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

West Bromwich and District Hospital.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

West Ham and Eastern General Hospital, Stratford, E.—Senior House Physician. Salary £120 per annum. Also Junior House Physician. Salary £100 per annum. Board, residence, and washing provided in each case.

West Ham Union Infirmary, Whipps Cross-road, Leytonstone, N.E.—Third Assistant Resident Medical Officer. Salary £180 per annum, with usual residential allowances.

Western General Dispenary, Marylebone-road, N.W.—Honorary Surgeon Accoucheur.

Wolverhampton and Staffordshire General Hospital.—House Surgeon and Resident Medical Officer for six months. Salary each at rate of £125 per annum, with board, rooms, and laundry. Also Pathologist. Salary £200 per annum.

Woolwich Tuberculosis Dispensary.—Temporary Assistant Medical Officer. Salary £25 per month.

York County Hospital.—House Physician and House Surgeon for six months. Salary at rate of £100 per annum each, with board, residence, &c.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Alford, in the county of Aberdeen; at Framlingham, in the county of Suffolk; and at Rathfriland, county Down.

Births, Marriages, and Deaths.

BIRTHS.

Brown.—On Sept. 26th, at The Uplands, Minchinhampton, Glos., the wife of Alfred Brown, M.D., of a daughter.

Dudgeon.—On Sept. 26th, at Stanhope-street, W., the wife of Leonard S. Dudgeon, F.R.C.P. Lond., of a son.

Haward.—On Sept. 29th, at Priory-road, N.W., the wife of Walter Haward, M.B., B.S., of a daughter.

Kennard.—On Sept. 25th, at Bedford-square, W.C., the wife of Dudley Kennard, F.R.C.S. (*née* Hoffmann), of a son.

Tresidder.—On Sept. 25th, at Stratton-terrace, Greenbank, Falmouth, the wife of Mr. S. L. Tresidder, L.D.S. Eng., of a son.

MARRIAGES.

Colebrook—Campbell.—On Sept. 24th, at St. Stephen's Church, Gloucester-road, Leonard Colebrook, M.B., B.S., Captain R.A.M.C. (T.), to Dorothy, youngest daughter of the late John Scarlett Campbell, I.C.S., and Mrs. Scarlett Campbell.

Hall—Slatter.—On Sept. 22nd, at St. Andrew's, Wells-street, W., George Hall, M.D., to Bessie, youngest daughter of the late John Slatter, of Adelaide, South Australia.

Welch—Skinner.—On Sept. 26th, at St. Luke's, West Norwood, Horace Rexford Welch, M.D., eldest son of Samuel Welch, M.D., to Dorothy Eunice, daughter of the late Rev. Henry Skinner, M.A., of Geelong, Victoria.

DEATHS.

Armstrong.—On Sept. 15th, in France, from wounds. Arthur Keith Armstrong, L.R.C.P., M.R.C.S., Lieutenant R.A.M.C., aged 33 years.

May.—On Sept. 23rd, at his residence, High Cross, Tottenham, Edward Hooper May, M.D., F.R.C.S. Eng., in his 83rd year.

Peel Ritchie.—Accidentally drowned at Granton on Sept. 24th, Lionel Charles Peel Ritchie, Ch.M., M.D., F.R.C.S.

Thomson.—On Sept. 27th, at a nursing home, Sir Alfred E. Thomson, M.D., of Cape Town.

Turner.—On Sept. 26th, at Springfield, Upper Clapton, Frank Edward Turner, M.R.C.S., L.S.A., aged 73 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

THE WISDOM OF ANIMALS.

To the Editor of THE LANCET.

SIR,—Your note last week under this heading prompts me to remind your readers that undoubtedly the endowment by popular consent of certain animals with certain qualities was the reason for much of the fanciful ancient pharmacy; the underlying idea was that the exhibition of potions of the animal as a drug would endow man with the characteristic qualities of the animal. Animal remedies from the earliest times have proved the anthropomorphising tendency. The toad was ugly from the human point of view; therefore it was venomous, and in the late eighteenth century Gilbert White, of Selborne, had heard of a quack doctor eating toads whole either to prove that they were not poisonous or that he was poison proof. The toad really forms part of the ancient pharmacopœia, which doubtless regarded it as a poison. All the drugs derived from the intestines or brains of quadrupeds and birds by our ancestors were sanctioned by fanciful human attributions. The flesh of certain birds was supposed to promote swiftness. The flesh of the lion, if procurable, was believed to infuse valour into the eater. Portions of goat were eaten in order to strengthen procreative powers. The superstitions concerning the animals being multifarious the composition of the various potions and electuaries became complicated in consequence. The jokers of old time who impressed their stories upon tribal credulity were responsible for this preposterous pharmacy. The persons who tell these stories nowadays to credulous editors are responsible for a certain amount of irritation. They have their joke, but they help to create a sentimentality which may be actively mischievous.

I am, Sir, yours faithfully,
A SERIOUS PERSON.
Sept. 28th, 1914.

MODERN MEDICAL POETS.

IT is well to have among us, now as of old time, a few disciples of Æsculapius on whom at their birth Melpomene has glanced with tranquil eye. Mr. Augustus H. Cook, M.B. Lond., has published through Messrs. G. Bell and Sons, Limited, a little volume of verses called "Eve Repentant and Other Poems." Though perhaps the verses are of somewhat unequal merit, they contain some good description, some picturesque flights of imagination, and in some of the verses a deep religious feeling smoothly and lucidly expressed. Major Greenwood, M.D., LL.B., in "London, an Historical Poem" (originally printed in the June issue of the *City of London Illustrated*), traces, in nine-lined iambic pentameters, the last line being an Alexandrine, the rise and development of London in its main incidents and conditions. It contains reproductions of the Steel Yard and neighbourhood, from Van Wyngard's plan taken for Philip II. of Spain, and a map of London from Lincoln's Inn to the Tower, circa 1658. Yet a third medical writer of verse is Dr. F. Barber Wells, for whom Messrs. W. H. and L. Collingridge, 148, Aldersgate-street, have published (in khaki uniform with red facings) two war poems, which, we are informed, are "sold for the benefit of the Prince of Wales's National Relief Fund." The first, entitled "1914," is a sonorous ode on the war in the cadence of Gray's Elegy. The second, "The Roll of the Drum," has a swinging rhythm that well suits the subject.

THE LIBRARY OF THE MEDICAL SOCIETY OF LONDON.

Mr. George Bethell's "Account of the Library of the Medical Society of London," which has been reprinted from the *Library Association Record* for May, contains a note on Dr. John Lettsom, the founder of the library, and recounts the history of the library with not a few interesting *obiter dicta*. It is true, for instance, that "the principal part of our knowledge must be ever derived from comparing our observations with those of others." Mr. Bethell quotes four variants of the well-known epigram on Lettsom. We learn that Dr. James Sims, who managed to be selected president of the society for 20 years, in 1800 succeeded in selling to the library a large number of books, for which he received £500 cash down and an annuity of £30 a year for himself and his wife. A very interesting MS. in the library is the diary of Dr. John Ward, vicar of Stratford-on-Avon, who had practised medicine. One entry therein is worthy of special note: "Shakespear, Drayton, and Ben Jhonson (*sic*) had a merry meeting, and it seems drank too hard, for Shakespear died of a feavour there contracted." The living wage and discrimination against married employees appear, from the rules formulated by the committee on Jan. 25th, 1780, concerning the duties of an "under library keeper," to have been live questions even in those days, for it is stated that this official should be "rather a single person than married," and that he may have "a *sufficient salary* for his subsistence." The library contains some valuable incunabula and an excellent collection of Early English printed medical works of the sixteenth and seventeenth centuries, including a reprint from the only copy of the original edition of Servetus's "De Trinitate Divini" that escaped being burnt with its author by Calvin. Nearly all the copies of this reprint were burnt by Dr. Gibson, Bishop of London.

THE RAGGED SCHOOL UNION AND THE WAR.

To the Editor of THE LANCET.

SIR,—This great crisis in the life of our nation has involved the withdrawal from our ranks of hundreds of men who have either joined the Territorials or enlisted, and there is immediate necessity for wholehearted men and women to volunteer as workers in filling up the gaps that the physical, social, and religious welfare of the children may not suffer. It is of the utmost importance to the nation that our 140 affiliated schools and missions should be maintained at their normal strength. It would be appalling to contemplate the state of our city poverty areas without such centres of light and healing.

Our holiday homes, also, at Southend, Margate, Bognor, Bournemouth, and Windsor will be used throughout the year for poor cripple children suffering from serious complaints and who are quite unable to face the ordinary conditions of London life. Many of our missions in populous centres are rendering national service by allowing their premises to be used by the Soldiers' and Sailors' Families Association, day clubs for unemployed boys, workrooms for girls and women, &c. All this, however, costs money—£100 a day is needed—and the measure of our ability to meet the dire need surrounding us is exactly the measure of the generosity of the public.—We are, Sir, yours faithfully,

JOHN KIRK, Director.
ARTHUR BLACK, Honorary Secretary.
32, John-street, Theobald's-road, London, W.C.,
Sept. 25th, 1914.

SURGICAL INSTRUMENTS FOR SALE.

WE publish this week an advertisement offering for sale a complete set of surgical instruments and operating equipment. We know the circumstances in which the articles are for sale, and think that some of our readers might like to call the attention of the public to an opportunity that is being offered to them, at a time when gifts of this nature are being generously made for the assistance of military and Red Cross hospital organisation.

RABIES AND MUZZLING IN NEW YORK.

THE prevalence of rabies in New York recently led the Committee on Infectious Diseases of the Advisory Council of the New York Department of Health to adopt a muzzling order. The Commissioner of Health publishes in the *Weekly Bulletin* of the Department for Sept. 5th a series of extracts from the variegated correspondence that has poured in on him since the enforcement of the order. While much of it is commendatory, one writer has the temerity to assert that "there is no such thing as mad dogs or people being bitten." The logical faculty of one writer can be estimated from the remark, "Surely an occasional mad dog will not lead you to condemn the whole race any more than an occasional insane human leads us to ask what is the use of any of us." Even in New York, however, dangerous insane humans are confined where they can do no harm. Another writer says that "you may as well banish children" as dogs. Fortunately the majority of correspondents seem to entertain more reasonable views.

MILITARY SURGERY IN THE BALKANS.

J. A. H.—The following two papers appeared in THE LANCET last year:—"Some Surgical Experiences during the Balkan War," by Sidney Smith (May 31st, 1913), and "Medical and Surgical Experience in the Balkan War," by C. Max Page and S. V. Appleyard (July 19th and 26th, 1913). A book entitled "With the British Red Cross in Turkey, 1912–13," by A. Duncan-Johnstone (London: J. Nisbet and Co. Price 5*s*. net) was reviewed in our columns on May 31st, 1913.

THE Scholl Manufacturing Company have offered to the War Office 2000 pairs of their "foot-eazers" for the use of the troops now serving abroad and for those who may shortly be called upon to take their places in the fighting line. It is claimed that these arch supports have a very restful effect upon the feet when engaged in long marches.

◆

Englishwoman.—Our correspondent is mistaken. Medical practitioners do not "accuse" their patients of hysteria any more than they "accuse" them of tuberculosis. To speak of a "determined and sustained charge of hysteria" puts the matter in a grotesquely wrong light.

Subscriber.—We think 10*s*. 6*d*. a reasonable fee for examination and report.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. T. Gray: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. T. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. E. Batten: Syringomyelia.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Stewart: Localisation of Cerebral Tumours.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: The Skin in Health and Disease.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: Puerperal Infection. 11 A.M., Examination of Patients and Minor Operations.

TUESDAY.—10 A.M., Major Operations.

WEDNESDAY.—10 A.M., Obstetrical Lecture: Puerperal Infection (continued). 11 A.M., Examination of Patients and Minor Operations.

THURSDAY.—10 A.M., Major Operations.

FRIDAY.—10 A.M., Gynæcological Lecture: Injuries of Labour (continued). 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT [illegible] REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 30th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 24	30 38	N.E.	—	105	67	48	50	50	Foggy
" 25	30·26	S.E.	...	110	67	48	50	51	Foggy
" 26	30·22	S.W.	...	105	72	50	50	52	Fine
" 27	30·33	S.W.	...	100	66	51	53	55	Fine
" 28	30 10	W.	—	86	64	51	52	54	Cloudy
" 29	30·31	N.	...	97	58	49	46	51	Fine
" 30	30·43	N.E.	...	65	56	44	43	45	Hazy

The following magazines, journals, &c. have been received:— Dublin Journal of Medical Science, Bulletin Mensuel de l'Office International d'Hygiène Publique, Indian Medical Record, Quarterly Journal of Microscopical Science, Journal of Tropical Medicine and Hygiene, New Zealand Medical Journal, Journal of Nervous and Mental Disease, Mercy and Truth, Guy's Hospital Gazette, Archives of Internal Medicine, &c.

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An Address

ON THE

PATHOLOGY OF HEART FUNCTION.

Delivered at the Pathological Section of the British Medical Association Meeting, Aberdeen,

BY THOMAS LEWIS, M.D. LOND.,
F.R.C.P. LOND., D.Sc.,
PHYSICIAN, CITY OF LONDON HOSPITAL; ASSISTANT PHYSICIAN, UNIVERSITY COLLEGE HOSPITAL.

GENTLEMEN,—With your assent I propose to confine my observations within certain bounds, and to deal with questions to which answers have been eagerly and widely sought during the past few years in this country. My remarks will be concerned with those curious disorders of the heart's action which are disturbances of the regular sequence of chamber contraction.

THE RESULTS OF RECENT WORK.

At the outset let us detect and isolate the first chief product of recent work. From the accumulated study of the past few years springs the knowledge that the mechanism of the human heart beat may be perturbed in one of several chief ways; each is now distinctly recognisable in the patient, each may be reproduced in the experimental animal. To that extent each is clearly understood. Phenomena with which we had to deal, the meaning of which was unknown to us, are now, thanks to this work, clearly and indisputably known to result from defined changes in the action of the heart. The identification of the types of cardiac irregularity has been a first and great advance. It is an advance which has been taken with security and finality. That the action of the human heart may be disturbed by sinus arrhythmia, heart-block, extrasystole, simple paroxysms of tachycardia, auricular flutter, auricular fibrillation, and alternation of the ventricle is known beyond all reasonable doubt. This analysis forms no longer a centre for discussion; it is, perforce, the first and generally accepted foundation for discussion. I pass, then, from such questions as the reasons for irregularity of the heart, affirming that the problems which concern themselves with the kinds of these disorders are solved. Excepting a few of the rarest and least important disturbances, the analysis of disordered heart action has ended.

The inquiry proceeds to its second stage—search for the causes of the named disorders. So far as we are able, let us carry forward our certain knowledge of the existence of these disorders and study them impartially, freed from the constructed hypotheses which already closely surround them. There is, so I think, one hypothesis in particular which impedes us, and Wenckebach, to whom we owe so much for our knowledge of these disorders, is in the first place responsible for it. It is the attempt to correlate these disturbances of the heart's action with perversions of those hypothetical functions of heart muscle to which Engelmann pledged his faith. While Gaskell first demonstrated that certain attributes of heart muscle are affected in varying degree by such procedures as stimulation of the great heart nerves, Engelmann followed him and attempted a nicer delimitation, regarding these attributes as isolated and strictly separate functions. To accept the doctrines of Engelmann's school is to accept the view that rhythmicity, excitability, contractility, and conductivity are functions of muscle so independent that each has a distinct chemical process underlying it. Now it is not within the proper range of pathological speculation fully to discuss the merits or demerits of this doctrine, which has attaching to it a fatiguing Greek terminology of its own, but it is within our province to consider if such doctrine is acceptable as a basis for pathological thought. I would remind you that it is a departure not only from general but from special physiological teaching in this country. Gaskell was at much pains to emphasise, not so much the varying effects of vagal stimulation upon different qualities of muscles, but the special endowment of certain regions of the heart with different qualities. It was to the junction of sinus and auricles and to the junction of auricles and ventricles that he pointed as to tissue specially endowed with rhythmic properties; it was to these same tissues he attributed a less highly developed power of conducting impulses. The important divergence of these trains of thought, that of Gaskell and his successor, has been insufficiently appreciated in the pathological world.

The observations of these earlier workers were undertaken upon the lower orders of the vertebrate heart; we as pathologists deal finally with more highly organised structures. I would lay stress on this consideration, that valuable as is the knowledge of the amphibian and reptilian heart, valuable especially in guiding us to a true appreciation of the more fully developed organ, we should never forget that our real business is with the mammalian heart, and that the basis of pathological argument should be a basis of mammalian anatomy and physiology; these sciences form the actual connecting links between pathology and the more elemental sciences.

HEART FUNCTION IN RELATION TO DISTURBED HEART ACTION.

I return to the question of heart function in its relation to disordered heart beat. Sinus arrhythmia is, as you know, a disturbance of the heart's rhythm at its source—an irregularity of the whole organ. Is it justifiable to classify it as a disorder of rhythmicity? Remember that the term rhythmicity, as we are now using it, is a special term, used to designate a function of heart muscle generally. Have we to deal with a change in this general property of the heart muscle as a whole? We may or we may not; there is little or no evidence. But the facts are these. The mammalian heart beat originates in the immediate vicinity of a small and specially constructed mass of tissue, the sino-auricular node. Indeed, it is now a generally accepted view that this node originates the mammalian heart beat; we may regard this node as one of a few collections of tissue specially endowed in Gaskell's sense with the property of rhythmic impulse formation. Cool this node, the heart rhythm is retarded; destroy the node, the natural rhythm of the heart is lost. Are such disturbances to be regarded as disturbances of rhythmicity? In the last case evidently not, for we deal with local destruction of tissue. Similarly in auriculo-ventricular heart-block, where we deal with minor changes in the facility of impulse transmission, we might hesitate to deny the affection of a function "conductivity" in specific instances; but when that slender strand, the auriculo-ventricular bundle, is broken, transected by the growth of abnormal tissue or by injury, we may not think in terms of altered functions, we must think perforce of tissue damage.

My thesis is that we have no direct knowledge of disordered "rhythmicity" or disordered "conductivity," &c., in the human heart, using these terms in their special senses, and that Wenckebach's classification of irregularities of the heart, based as it is upon Engelmann's hypothesis, rests upon an insufficiently secure foundation. The dangers of the functional hypothesis cannot and have not been avoided. Gaskell's argument, pointing as it does to specific regions of the heart, gives us a safer direction.

Yet it appears questionable if a purely physiological or purely anatomical basis can in the end serve us. Pathology must take count of new factors. In Wenckebach's classification extrasystoles are forced into the category of disturbed "excitability." Now excitability is the power of the heart to respond to external stimuli, electric, mechanical, or chemical. Its degree is measured by testing the strength of the threshold stimulus. That spontaneous extrasystoles are forced by some abnormal stimulus acting upon a hyperexcitable ventricle is a supposition for which no evidence has been adduced. On the contrary, there are conditions in which excitability, electrically tested, is depressed, and in which these beats are prevalent (notably in poisoning with potassium chloride). It is not in the quality excitability that the change is to be sought, but rather in the forces which explode the developing contraction. We know of no process in the working of the normal heart which in any way resembles the shock used to test excitability; in forcing a contraction this shock usurps the normal process of stimulation by anticipating it. In the extrasystole there is some similar agency at work; good ground can be taken for the belief that the stimulus is of an abrupt kind, that it is not a hurrying of normal impulse formation; but that it is of a kind as foreign to the physiological organ as is the induced current.

These preliminary considerations I have dwelt upon at some length because I think it of great importance at the outset we should have clear and solid ground upon which to stand. Consider the separate disorders of the heart's mechanism in terms of function and you veil them with mental concepts of an unstable and elusive, if not delusive, nature; consider them as simple facts and treat each upon its own merits, and you have rock beneath your feet. Briefly, my view is that pathology as a science is safe when it leaps from the *facts* of physiology; but that its footing is precarious when its take off is the physiological hypothesis. The remaining part of my paper will conform to this point of view; I propose to discuss a few of the problems which are suggested by contemporary observations, and which are concerned with separate disorders of cardiac mechanism.

AURICULO-VENTRICULAR HEART-BLOCK.

I have said that the existence of auriculo-ventricular heart-block in man, the subject of disease, has been abundantly proved; it has been proved in its many grades. It seems to me also that we can point, without fear of contradiction from facts, to the cause of this heart-block in a large number of our patients. There is to my mind no doubt from our evidence that the sequence of the contractions of auricle and ventricle is normally and wholly maintained through the medium of the auriculo-ventricular bundle; and that structural damage which completely breaks this slender tract is responsible for a number of instances of complete dissociation. It is not my present intention to discuss this evidence, for I have done so somewhat fully in another place. But I may remark upon the significance of these observations. The heart-block which so arises is engendered neither by an affection of "conductivity" nor by an original lack of conductive power on the part of the tissues involved. It is the result purely of accident, the division by disease of the conducting fibres, concentrated in a slender tract. In many of those instances where, though complete dissociation has been present, the lesions found after death but partially break the anatomical continuity, a similar explanation may be quite rationally held, for here we may assume complete loss of function even though there is but incomplete loss of structure; meaning by function not the single function of "conductivity," so called, but all function. But likewise instances are on record of complete dissociation in which no lesions have been discovered in this tract, and I may be allowed briefly to relate a few reflections upon these types of heart-block.

Experimental heart-block may be obtained in one of three chief ways: (1) by direct interference with the conducting tracts; (2) by stimulation of the vagus nerve, directly or indirectly; and (3) by the introduction of poisons into or by altering the metabolites of the circulating blood. That heart-block is induced in the human subject by similar disturbances is known. It follows when a calcareous or gummatous mass or malignant growth invades and divides the tract; it can be produced by pressure upon the vagus in the neck; it occurs in asphyxia when the heart is dying. But it is a moot point if long-continued heart-block of high grade is ever produced in the human subject by purely nervous or purely chemical influences. There are no unquestionable records of the complete though temporary removal of such heart-block by the administration of atropine, though the test has often been applied, and experimental heart-block of high grade and resulting from poisoning can be induced only where the heart is reduced to a nearly moribund state. For these and other reasons my own feeling is that persistent heart-block of high grade is invariably the result of a local tissue damage or that there is some cause of heart-block with which we are as yet totally unacquainted. It may be that our histological methods are still too imperfect to demonstrate conspicuous lesions, as they were in the nervous system before the discovery of Wallerian degeneration.

Temporary heart-block in man, on the other hand, is to be explained on the grounds of nervous influence or chemical change in some instances. In what region of the heart are such influences felt? In some recent experiments, in conjunction with Dr. J. Meakins and Dr. P. D. White,[1] I have been able to return a partial answer to this question, and the answer conforms to Gaskell's teaching. The vagus in producing heart-block acts upon the region of the conducting tissues in the immediate neighbourhood of the a.-v. node. So also does the single poison tested, a product of asphyxiation. Unquestionably this region of the conducting tissue is a susceptible point, a natural blocking point. This and other evidence supports the conclusion that heart-block, produced in one of the three named ways, is conditioned by interference, be it through direct, nervous, or chemical channels, with the auriculo-ventricular conducting system, and especially with the auriculo-ventricular node and bundle.

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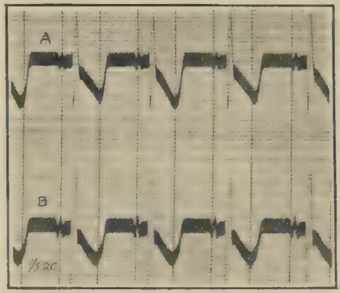
[1] Heart, 1914, vol. v.

PREMATURE CONTRACTIONS AND ALLIED DISORDERS OF THE HEART'S RHYTHM.

There are several disorders of the heart's action which are very closely related. I refer to premature contractions (or extrasystoles), to paroxysmal tachycardia, to auricular flutter, and to fibrillation. It is well known that in patients who suffer from attacks of either one of the three last-named disturbances premature contractions are common in the intervals between the attacks; they are especially common when the attack is pending, or immediately at its offset. In experiments almost any interference which will produce one or other of the graver disturbances will when moderated produce the extrasystole. Influences which abate the greater, for example flushing the heart with blood in anæmic subjects by pressing on the abdomen, or the injection of small doses of potassium chloride in animals, will also abolish the lesser malady. In many patients who are the subjects of extrasystoles these beats are not isolated; the interruptions of the heart's rhythm may for periods be by single premature beats, but here and there one disturbance is quickly followed by a second; the extrasystoles are coupled. In the same or other patients groups of three or more such beats may be seen from time to time, though the customary event in these hearts is the solitary interruption. Now if we consider the solitary beat and the first of a short run of beats, we can discover no difference between them by any of our methods of examination. Both start prematurely, both originate in the same focus, and this focus is almost always an abnormal one; it may be in auricle, it may be in ventricle. The events which succeed the disturbance differ, but only because in one case the same event is repeated. If we examine the effects of the solitary beat upon the subsequent beating of the heart we discover essentially the same effects as those which follow the last of a short succession of such contractions. The conclusion is, I think, inevitable—namely, that the solitary extrasystole and the individual beats of a short run are of the same nature. A precisely similar conclusion applies to extrasystoles and to individual beats of a long-continued paroxysm of tachycardia. If, as is often the case, the short run of beats is continued for 10, 15, or more cycles, the phrase "run of extrasystoles" is no longer applied to it; the disturbance constitutes the simplest form of paroxysmal tachycardia. In other words, there is no real dividing line; there is no essential distinction to differentiate the run of two or more extrasystoles from a paroxysm of tachycardia which lasts for many hours. Clinical and experimental evidence show the same want of definite boundary between the paroxysmal tachycardia and auricular flutter; here the distinction is chiefly one of heart rate, and this passes through all gradations. Lastly, the same conclusion applies to paroxysmal tachycardia or flutter and the more complex conditions called fibrillation.

Let me for purposes of illustration describe the response of the ventricle while this organ is under the influence of gradually lightening chloroform anæsthesia, for the events and their progress are very striking. The first disturbance may come with solitary extrasystoles arising at a recognisable focus (say A) in the ventricle; it is followed by similar extrasystolic interruptions from other foci (recognisable as coming, we will say, from B and C); the extrasystoles of these types become grouped, and a paroxysm of tachycardia of mixed form follows; the type of tachycardia, at first consisting of beats from foci A, B, and C, ultimately becomes still more complicated, and the coördinate action of the heart may ultimately become submerged and replaced by the condition termed fibrillation. The transition from the first extrasystole to the ultimate condition of fibrillation is a gradual one, a passage from the less to the more complex.[2]

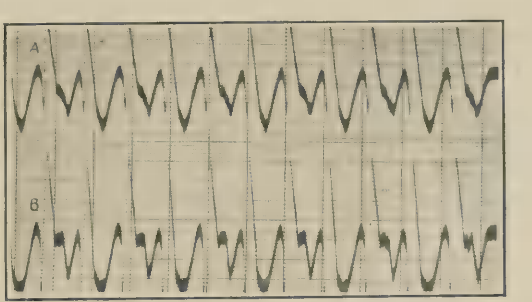
FIG. 1.



Simultaneous electric curves taken directly from two closely adjoining points on the wall of the right ventricle, showing the normal heart beats. The vertical lines represent given instants in time at 1/5 second intervals. Ordinates 1 cm. = 20 millivolts. (Reduced to half size.)

I argue from these and from similar facts that all the disturbances of the heart's action at present under consideration have the same essential pathology, whose simplest expression is the solitary premature contraction. But I would add that this conclusion appeals to me as one open to discussion; it is of no small importance if true, for in that case the key to some of the most important problems of cardiac pathology will be found when the cause of the solitary extrasystole is discovered.

FIG. 2.



A record from the same points while the apex of the ventricle is stimulated with a weak faradic current. The heart is responding irregularly but coördinately at about 300 per minute. (Reduced to half size.)

That ventricular fibrillation is associated with independent activity of closely adjoining strands of muscle in the wall of the ventricles is, I think, clear by such records as those which I now show you. Suppose we place two small contacts on the superficies of the heart, exposed experimentally, and lead from each of them to an indifferent point.[3] You may obtain with a sensitive galvanometer two simultaneous curves, indicating the electric state of the muscle in these adjoining areas. When the heart is beating normally you record curves from the two areas which are practically identical, the time interval between corresponding deflections in the two curves being so small as to be imperceptible to the naked eye. (Fig. 1.) The two areas become active coördinately. Now if you stimulate a part of the ventricle some distance away with a weak faradic current and gradually increase the strength of this current, eventually the heart responds to it. It responds by a series of somewhat irregular but very rapid contractions at a rate of about 300 per minute. So rapid are the contractions that the circulation is seriously embarrassed; yet the records at this stage still show that the two muscle areas have become active at constant intervals relative to each other; the heart wall is still beating coördinately. (Fig. 2.) But press the stimulation further and the phenomenon known as fibrillation supervenes, and immediately it comes you see its characteristic writing. (Fig. 3.)

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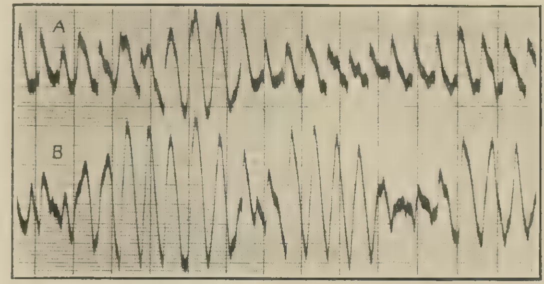
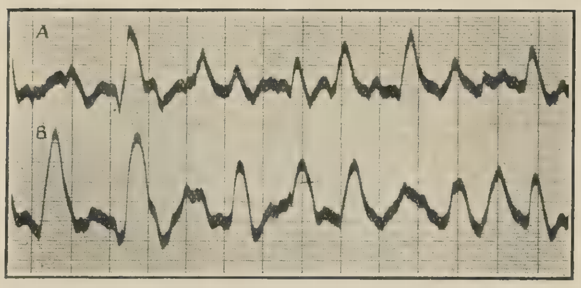
[2] The fact that the transition is sometimes less gradual and that the growth of the disorder is in steps does not affect the general line of reasoning.

FIG. 3.



Immediately after the onset of permanent fibrillation. Coördination between the two areas is now lost. (Reduced to half size.)

FIG. 4.



The same fibrillation at a later stage. (Reduced to half size.)

The deflections are irregular in amplitude and incidence and occur at first at a rate of some 500–600 per minute; no blood is ejected from the heart at this stage; and the records show that the adjoining muscle areas are no longer coördinated. Each gives the same type of curve, but individual deflections do not correspond either in amplitude or time incidence. The heart dies in this state, and as it dies the oscillations become slower and more rounded (Fig. 4), but still maintain their independence in the simultaneously written curves. This observation leaves no doubt of the independent activity of the adjoining muscle areas, and shows that the subdivision of the muscle is considerable. For such curves are obtained when the contacts actually meet each other. That this independence is the result of independent formation of impulses, consequent upon the spread of a condition of irritation, appeals to me most forcibly.

I pass to a consideration of the cause of extrasystoles as they occur in disease, and to the causes of allied disorders, and in doing so am aware that I enter a field of controversy.

RELATION BETWEEN EXTRASYSTOLIC AND PHYSIOLOGICAL BEAT.

I have already drawn attention to the similarity between the reaction of the heart to an electric shock and to its reaction to whatever creates an ordinary extrasystole, and have hinted that the two reactions may have much in common. But the matter may be approached in a more convincing fashion if we closely compare the extrasystole with the physiological beat. My present thesis is that there are clear distinctions between them. These distinctions are to be sought in the nature of the processes which precede and induce contractions and not in the contraction itself.

1. The most remarkable character of the extrasystole is its *prematurity*. It occurs as a rule long before such time as a heart-beat is expected. The process which prepares the physiological heart-beat is slow, that which precedes the extrasystole is abrupt. In the human ventricle, when it is isolated and beating in response to its own natural rhythm, a beat of physiological type is prepared in no shorter time than half a second, usually the time required is as much as a second and a half; the extrasystole may arise in the ventricle after no greater rest than a twentieth or a fiftieth of a second.

2. The second distinctive character which I would emphasise is the absence of rhythmic tendency. Extrasystoles, it is true, may occur in sequence, but that is not their habit; their habit is to stand isolated. The physiological heart-beat is essentially rhythmic; when a beat of this kind is once built up the next is prepared more readily, and the beats occur in an accelerating succession until the final rate is fully established. If the extrasystole is repeated, and such repetition is, as I have stated, not habitual, then this acceleration is not seen,[4] the rate is maximal from the commencement and is maintained as a general rule with wonderful uniformity. But the extrasystole is almost always isolated, and it is followed by a pause which on account of its length offers many opportunities of repetition of which the extrasystole fails to avail itself. The contrast with the natural ventricular beat could not be greater; the latter proclaims itself at each opportunity; when impulses are lacking to stimulate the ventricle, the ventricle initiates its own slow rhythm; if impulses reach it irregularly the ventricle will beat spontaneously at each lapse of a given period of time.

3. Those influences which promote spontaneous rhythms do not necessarily promote premature contractions. In those centres where the property of rhythmic impulse formation is highly developed, this property is always active under conditions of normal nutrition; though it may be temporarily dormant if the centre under observation is already responding to a more active rhythm. It suffices to

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[3] The lead may be from closely placed paired contacts on the heart wall; the effects are the same.

[4] Such, at all events, is the rule.

inhibit the receipt of such impulses, when the centre invariably awakens. Extrasystolic contractions are not seen in these circumstances; they are especially associated with malnutrition or poisoning. There is no relation between the heightened activity of physiological heart rhythms and the prevalence of extrasystoles. Often influences which depress one favour the occurrence of the other. No more notable example could be cited than the action of potassium chloride, which in full doses retards natural impulse formation in the heart, while it creates extrasystoles.

4. The reaction to the heart nerves is different in the two cases, and this has been noticed particularly in respect of the vagus. Stimulation of the vagus slows the physiological rhythm, be it of auricular or auriculo-ventricular origin; and with graded stimulation the slowing is gradual and is followed by an equally characteristic and gradual acceleration until the original rate is reached or surpassed. The action of the vagus upon extrasystolic beats, occurring successively, is essentially different. There is either no reaction or an abrupt and complete termination of these beats.

5. The naturally rhythmic centres are not the centres from which extrasystoles commonly arise. Electrocardiographic studies have taught us a great deal as to the foci from which contractions spring. Physiological beats are propagated mainly from three centres—the sino-auricular and auriculo-ventricular nodes and the auriculo-ventricular bundle. These are the most rhythmic centres of the heart. The rarest forms of extrasystole are those which arise in these structures; they come as a rule from other regions of the heart.

6. The physiological rhythm is fastest which is propagated from tissue lying nearest to the superior cava, and as we pass to other centres the rhythmic properties are found to be less highly developed. There is no known difference in the rates at which extrasystolic contractions are built up in the auricle and ventricle, whether the rate be judged of in the solitary or in the successive beats.

These arguments will suffice to support the proposition, which I offer for discussion—namely, that certain of the preparatory processes which precede the normal contraction on the one hand, and the extrasystolic contraction on the other are essentially different, and that those which precede the latter are of a kind foreign to the physiological heart.

The Rôle of the Heart Nerves in Causing Extrasystoles.

I turn to the final problem upon which I have remarks to offer: the relation of the heart nerves to extrasystolic contractions. And at the beginning let it be emphasised that this is a distinct problem from the influence of the nervous apparatus upon the activities of natural or physiological impulses, so at all events I think it should be considered. In discussing this question I shall refer more than once to the important recent work of Rothberger and Winterberg. Rothberger and Winterberg's papers must be read with a close regard for the nature of the rhythms which they produce; they have not recognised the possible, nay probably, distinctions between the two types of contraction which we have just reviewed. Many of the examples of new rhythms which they publish as resulting from nerve stimulation are not, or are not certainly, of an extrasystolic nature, but are, or may be, accelerated rhythms of the physiological order, though emanating from abnormal centres. This criticism is a serious though not a complete criticism of their work, and one which not immaterially affects their conclusions. I would also caution you in another respect. We shall discuss the influence of the nerves upon extrasystolic contraction, and use as illustrations successive contractions and fibrillation. This is necessary while the facts at our disposal are relatively meagre; but it should not be forgotten that the argument is based to some extent upon the hypothesis that fibrillation is extrasystolic in kind; in the future it will be necessary to safeguard our conclusions by a distinct consideration of each form of cardiac disorder.

Let us consider Rothberger and Winterberg's results in some detail. In 1911 a paper, which has commanded widespread attention, appeared under their names.[5] On page 353 of this communication stands the conclusion that: "This conjecture obtains in the results of our experiments a far-reaching confirmation. For, despite many exceptions, the combined stimulation of right vagus and left accelerans gives, with unmistakable frequency, left-sided ventricular extrasystoles which interrupt the vagus standstill." As an instance, they cite Fig. 3 as an illustration of this important conclusion. The curves of this figure show perfectly clear events. While the sympathetic is being stimulated, right vagus stimulation produces in the first instance slowing of the whole heart, and as the heart slows the ventricle escapes; rhythmic beats, at a rate slower than the original heart-rate, appear in the curves. These beats in the electrocardiograms have the same outlines as extrasystoles from the left ventricle. Now I have already said that extrasystoles usually arise in abnormal heart foci, and amongst other positions of origin is the ventricle. Arising in the ventricles they produce highly abnormal electrocardiograms which depend upon the direction taken by the excitation wave in the heart. Rothberger and Winterberg have fallen into this error; they have taken the abnormal origin of the beats as an evidence of their extrasystolic nature; but this reasoning is not justified by our knowledge, beats not only of the extrasystolic but also of the physiological order may be associated with the same form of electrocardiogram, for the two forms of heart contraction may come from the same heart focus and the courses of the excitation waves may be the same through the muscle. The conditions of Rothberger and Winterberg's experiments were precisely those which would enhance a physiological rhythm in the ventricle hitherto dormant, and the vagal slowing would permit its appearance. The curves in question are unmistakably examples of an escape of this kind; they contain no evidence of extrasystolic rhythms. And if we look through the figures of this paper we can find, with two possible exceptions, no substantiation of their conclusions. The possible exceptions are two examples of fibrillation of the ventricles stated to be the result of similar nerve stimulations. Now ventricular like auricular fibrillation is a phenomenon which is not of infrequent occurrence in animals under experimental conditions. It is not the first occasion on which one or other disorder is reported to have followed interference with the vagus[6]; the disorder comes in what appears to be a most capricious fashion. It was seen on three occasions in the 30 experiments upon which their paper is based. I put it to you that if there was evidence of extrasystolic beats—allowing that fibrillation is of this nature—on only three occasions in 30 experiments confined to interference with the heart nerves, then we must inevitably conclude that the vagal stimulation, so often repeated without success, was no more than one, and probably by no means the chief causative factor. If we are to conclude that nervous impulses, acting alone, are capable of producing extrasystolic beats, we require far stronger evidence than this. An experiment must be devised in which by such interference the result is invariable or almost invariable; and evidence of this kind is necessary, for we now know the causes of extrasystole are of a most elusive kind, and creep into experiments unseen and unheeded. The isolated examples of fibrillation in Rothberger and Winterberg's experiments are to be ascribed largely, if not entirely, I think, to such factors.

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[5] Pflüger's Archiv, 1911, cxli., 343.

[6] It is an unfortunate fact that the two curves published as examples by Rothberger and Winterberg are almost the only ones of their series in which the automatic signal of vagus stimulation is lacking.

We pass finally to a discussion of observations of a somewhat different kind. I refer to the later papers of Rothberger and Winterberg and to those of Levy.[7] The former writers have shown that stimulation of the sympathetic nerves is followed by beats of an extrasystolic nature when the heart has been previously poisoned by barium chloride. Levy has shown that sympathetic stimulation is followed by the appearance of beats of the same kind, or by their increased formation, when the heart is poisoned with small doses of chloroform. The evidence for both these statements is, I think, conclusive.[8]

It has to be acknowledged that the nerves of the heart may play a very significant rôle in producing the disorders of mechanism considered. Can we define this rôle more distinctly? There are, so it seems to me, two questions to which answers may be returned at the present time. Has it been shown that abnormal nerve impulses playing upon a normal heart may be responsible for extrasystoles or the higher types of disorders? To this question we may return a negative answer. May nervous impulses playing upon a supersensitive or irritable organ provoke these curious contractions? To this question we may return an answer in the affirmative.

It is a striking fact that both in the experiments of Rothberger and Winterberg with barium chloride, and in those of Levy with chloroform, before the sympathetic is stimulated, conditions predisposing to extrasystole are known to be affecting the heart. Given such conditions, the sympathetic influences enhance the pre-existing tendency, and the disturbance or an exaggerated disturbance follows. So far, and no further, are we warranted in carrying our conclusions to-day.

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[7] Rothberger and Winterberg: Zentralblatt für Physiologie, Band xxv.; also Pflüger's Archiv, 1911, cxlii., 46; Levy and Lewis: Heart, 1911-12, iii., 99; Levy: Heart, 1912-13, iv., 319; and 1913-14, v., 299.

[8] Many of Rothberger and Winterberg's curves are open to the objections raised in criticisms of the earlier paper, but in some of their published figures the new beats have all the features of extrasystoles, and must, I think, be accepted as such.

OXFORD OPHTHALMOLOGICAL CONGRESS.—Mr. Sydney Stephenson has been elected master of the Congress, vice Mr. R. W. Doyne, nominated as past-master. Mr. P. E. H. Adams (Oxford) has become deputy master, and Mr. A. Bernard Cridland (Wolverhampton) honorary secretary. Colonel R. H. Elliot, I M S, has been elected a member of the council.

OBSERVATIONS UPON 31,000 CONSECUTIVE MEDICAL EXAMINATIONS,

CONDUCTED CHIEFLY FOR THE PUBLIC SERVICE.

BY SIR JOHN COLLIE, M.D. ABERD., J.P.,
MEDICAL EXAMINER FOR THE LONDON COUNTY COUNCIL; CHIEF MEDICAL OFFICER FOR THE METROPOLITAN WATER BOARD.

THE following observations are based upon 31,000 consecutive medical examinations made on behalf of two large public bodies and various insurance companies and solicitors during the last nine years. The figures are arranged in the following groups:—

	Cases.	Examinations.
I. Entrance examinations as to physical fitness	12,189 ...	13,526
II. Accidents amongst employees	3,667 ...	6,858
III. Sickness amongst employees	3,499 ...	7,391
IV. Medico-legal cases	2,216 ...	3,396
	21,571	31,171

I.—*Entrance Examinations as to Physical Fitness.*

Results of Medical Examination as to Physical Fitness of Candidates for Entrance into the Public Service.

Passed at first examination	9694	
Passed after postponement	990	
Passed temporarily, subject to re-examination yet to take place	82—	10,766
Rejected at first examination, one disability only...	1037	
Rejected at first examination, more than one disability	149	
Rejected after postponement...	237—	1,423
(Representing 13,526 examinations.)		12,189

Proportion of rejections.—A comparison of the figures contained in this table with those presented in 1911 will show that the proportion of candidates for the public service I have had to reject has considerably increased. Up to 1911 the percentage of rejections was 9·9 per cent., but in the past three years I have found it necessary to refuse 14·4 per cent. A large part of this increase is due to the number rejected on the ground of dental caries. It seems incredible that such a large number of people are ready to forfeit their chance of employment rather than undergo the treatment necessary to put their mouths into a proper condition.

Summary of Causes of Rejection of 1423 cases.

Defective visual acuity	479	Hydrocele	8
Dental caries	254	Refused physical examination	7
Heart disease	110	Obesity	6
Albumin	109	Goitre	6
Colour blind	103	Hæmorrhoids	5
Hernia	82	Anæmia	5
Varicose veins	54	Alcohol	4
Disease of lungs	25	Gonorrhœa	4
Poor physique	22	Mentally defective	4
Syphilis	18	Tubercular spine	3
Various skin diseases	16	Deformity	3
Diabetes	13	Urethritis	3
Varicocele	11	Fainted at vaccination	3
Debility	10	Various conditions of infrequent incidence	48
Deafness	8		

Varying standards.—The relative proportions of most of the defects which have led to rejection are very fairly maintained. Some of the variations may be accounted for by the differing standards of tests which have to be applied, having regard to the diverse natures of the employments proposed. Thus drivers of tramcars and fireman must have perfect vision, but there is no reason why those seeking employment in a clerical capacity should not be passed, even though possessing defective vision, provided suitable corrective lenses are procured.

Desirability of medical examination prior to employment.—Having regard to the large percentage of rejections I think I am justified in again urging the desirability of instituting a system of medical examination prior to employment. I do not advocate the employment of only those who are physically perfect (the army of unemployed would be of enormous dimensions if that standard came into operation), but I feel that in dealing with subsequent injuries or illnesses the advantage to be derived from a knowledge of pre-existing defects would be enormous, and, in addition, many men would not be permitted to undertake work the performance of which would be inviting disaster to themselves and others in their particular physical condition. Men with heart disease are often employed to perform heavy work because of their apparently robust condition, but a medical examination would disclose their total unfitness for anything of the kind. The big rise in the number rejected on account of poor physique from 4 to 22 need cause no alarm as being evidence of physical deterioration in the race, because in such a body as the Fire Brigade a very high standard of physique is demanded.

Examination of urine. (*a*) *Sugar.*—I have confirmed by further observation the opinion I expressed in 1911, that the indications of glycosuria (high specific gravity and crystals of glucosazone) so often found upon a first examination of urine are frequently merely temporary, and are the result of the mental anxiety and physical stress which so many candidates experience when appearing before the committee of a public authority and undergoing a medical examination with a view to securing an appointment. Although glycosuric urine is often indicative of the early stage of true diabetes, and the urine in these cases may respond to all the tests demonstrating diabetes, I believe the condition may well be of a temporary character and should not necessarily lead to rejection. Even if the diabetic condition is undoubted, the nature of the employment proposed may justify a pass. I remember the case of a professional man, aged 58, who had diabetes, but as his services were only required for some eight or ten years I ventured to take the risk, and after stating the facts quite frankly to his future employer advised his acceptance. He duly served his time, and died two years after leaving the service.

(*b*) *Albumin.*—The examination of considerably over 5000 further specimens of urine strengthens my opinion that we have not by any means reached the limit of the knowledge to be obtained by this procedure. No candidates for the public or any service should be refused admission merely because a first examination of the urine discloses the presence of albumin. Even if albumin is persistently present (it is frequently only temporarily so) it is not fair, especially to young candidates, finally to reject them until the centrifugalised deposit has been microscopically examined. In a large number of cases a second specimen of urine, although passed but a few minutes after the first, will show no trace of albumin, the probability being that the first reaction was produced by nuclear albumin obtained from a deposit lying in the urethra, the result, may be, of an old gleet.

Physiological or adolescent albuminuria certainly does not point to organic change in the kidneys. In the vast majority of specimens of urine passed by people under 22 or 23 years of age the presence of albumin will be found to be a temporary condition. My friend, Sir James Goodhart, tells me that he finds that when albuminuria is merely functional cold acetic acid when added to the urine causes it to assume a cloudy opalescent appearance. He adds: "I am sure this is a really valuable constructive test, for this is hardly ever found with nephritic albumin." In order to determine whether the albuminuria is or is not due to definite nephritic mischief the deposit should be subjected to microscopic examination at stated intervals on several consecutive days. Hyaline casts alone do not indicate disease.

Dental caries.—During the past three years I have paid special attention to the question of pyorrhœa alveolaris and the absence of healthy teeth. Many of the septic conditions—e.g., rheumatoid arthritis, rheumatism—the origin of which until recently has been sought in vain, will be found to be due to the slow, chronic poisoning brought about by the condition in which the working classes keep their teeth. A comparatively slight degree of traumatism is increased, and the period of convalescence unduly prolonged by the presence of oral sepsis; on several occasions the removal of decayed teeth during the period of disablement following an accident has facilitated recovery. I think, therefore, that when examining for admission into the public service special care should be taken that the teeth of a candidate are in good condition, so that he may not only digest his food and maintain his health, but that in the event of an accident recovery may not be delayed by the impetus traumatism seems to give to general septic absorption from pyorrhœa alveolaris. I have been much struck by the unwillingness of candidates to have decayed teeth extracted, and find that the shorter the period allowed them for extraction the more likely are they to have extractions performed. I now make it a condition of acceptance into the service that the mouth shall be in a healthy condition.

II. AND III.—*Examination of Employees for Accidents and Sickness.*

In my former report I stated that employees who have been on the sick list for 28 days from any cause are sent to me for examination and report, and that this was found to be a considerable check upon the temptation to malinger or unduly to prolong illness after accidents or sickness. Further, I pointed out that the 28-day rule, though by no means equal to systematic re-examination at set intervals, certainly enables me to keep an eye to some extent generally upon the health of the staff. For instance, a tramway driver was discovered to be suffering from aortic regurgitation and a school attendance officer from locomotor ataxia when they presented themselves on the expiration of 28 days' sick leave on account of a slight injury in the first case and a sprained ankle in the second. Recently this rule has been modified in certain sections of my work, accident cases being submitted as soon as practicable after their occurrence, without waiting for 28 days to expire.

Results of Examination of Employees as Regards Fitness for Work.

	Total accident and sickness cases. (7166).	Accident cases only. (3667).	Sickness cases only. (3499).
1. Cases certified fit for duty on first examination	20·2% ...	23·3% ...	17·7%
2. Cases requiring further leave from the date of the first examination ...	60·8% ...	64·4% ...	55·8%
3. Cases permanently unfit after single or final examination; also including deaths immediately under my notice...	13·3% ...	4·3% ...	23·9%
4. Undoubted malingerers	5·5% ...	8·0% ...	2·6%

Classification of 3667 Cases of Accidents. (Representing 6858 examinations.)

Contusions of limbs	748	= 20·4	per cent.
Wounds (various) of limbs	617	= 16·8	,,
Fractures of bones	341	= 9·3	,,
Sprains of limbs	281	= 7·7	,,
Herniæ	231	= 6·3	,,
Back, injuries of	216	= 5·9	,,
Head injuries and traumatic neurasthenia	204	= 5·6	,,
Injuries to the eye	190	= 5·2	,,
Synovitis of knee	124	= 3·4	,,
Burns	85	= 2·3	,,
Injuries of chest and neck	57	= 1·6	,,
Injuries of abdomen, pelvis, and organs of generation	46	= 1·2	,,
Dislocations of limbs	46	= 1·2	,,
Amputation of fingers for traumatism	32	= 0·9	,,
Displaced semilunar cartilage of knee	30	= 0·8	,,
Injuries of ear and mouth	22	= 0·6	,,
Unclassified	104	= 2·8	,,
Undoubted malingerers	293	= 8·0	,,

There is still a tendency to make the happening of a slight injury the pretext for obtaining the utmost amount of compensation. It is obvious that, if my experience is not singular, a state of things is arising that calls for careful attention.

Classification of 3499 Cases of Sickness, showing Proportion of Certain Diseases of More Frequent Incidence. (Representing 7391 examinations.)

Infective Diseases, 968 cases = 27·7 per cent.	
Pulmonary and laryngeal tuberculosis	230
Influenza	170
Rheumatism	170
Pneumonia	95
Rheumatic fever	72
Enteric fever	53
Primary syphilis (secondary syphilitic conditions are classified under systems particularly affected)	31
Rheumatoid arthritis	21
Tonsillitis	18
Empyema	15
Rheumatic gout	15
Scarlet fever	15
Diphtheria	14
Pulmonary tuberculosis suspected	11
Laryngitis, non-tubercular	6
Mumps	5
Actinomycosis	1
Various conditions of infrequent incidence	26
Diseases of the Nervous System, 602 cases = 17·2 per cent.	
Neurasthenia	221
Insanity and mental depression	83
Sciatica	53
General paralysis of the insane and locomotor ataxia	51
Cerebral hæmorrhage	37
Epilepsy	36
General mental deterioration	13
Disseminated sclerosis	10
Paralysis agitans	7
Heatstroke and sunstroke (not accident under the Workmen's Compensation Act)	7
Writer's cramp	6
Various conditions of infrequent incidence	78
Diseases of the Digestive System, 341 cases = 9·8 per cent.	
Gastric conditions	106
Appendicitis	63
Diseases of the rectum	42
Hæmorrhoids	39
Diseases of the liver	32
Duodenal ulcer	18
Abscess of jaw	5
Various conditions of infrequent incidence	36
Diseases of the Circulatory System, 255 cases = 7·3 per cent.	
Valvular disease of the heart	136
Varicose veins and ulcers, thrombosis and phlebitis	93
Fainting on duty	11
Arterio-sclerosis	4
Various conditions of infrequent incidence	11
General Diseases, 243 cases = 7·0 per cent.	
Debility	71
Premature senility	61
Anæmia	42
Gout	35
Obesity	9
Boils	7
Various conditions of infrequent incidence	18
Diseases of the Respiratory System, 236 cases = 6·8 per cent.	
Bronchitis and bronchial catarrh	125
Pleurisy	47
Asthma	45
Various conditions of infrequent incidence	19
Diseases of the Organs of Locomotion, 119 cases = 3·4 per cent.	
Lumbago	38
Ulcers of leg and foot	20
Bursitis	7
Bunion	6
Tubercular synovitis of knee	3
Tubercular abscess of foot	1
Various conditions of infrequent incidence	44
Diseases of the Urinary System, 106 cases = 3·0 per cent.	
Nephritis	61
Diabetes	17
Stone in kidney or bladder	12
Cystitis	4
Various conditions of infrequent incidence	12
Diseases of the Eye, 105 cases = 3·0 per cent.	
Defective vision (various causes)	36
Conjunctivitis	13
Iritis	11
Cataract	10
Choroiditis	6
Ophthalmia	4
Glaucoma	3
Various conditions of infrequent incidence	22
Diseases of the Skin, 101 cases = 2·9 per cent.	
Eczema	28
Sycosis	11
Erysipelas	9
Ringworm	8
Various conditions of infrequent incidence	45
Morbid Conditions Incident to Various Parts, 92 cases = 2·6 per cent.	
Cancer	62
Various conditions of infrequent incidence	30
Toxæmias, 80 cases = 2·0 per cent.	
Alcoholism	75
Various conditions of infrequent incidence	5
Diseases of the Generative System, male and female, 64 cases = 1·8 per cent. (18 of these cases venereal.)	
Diseases of the Ear, 40 cases = 1·2 per cent.	
Deafness due to various causes	16
Middle-ear suppuration	8
Mastoid abscess	5
Various conditions of infrequent incidence	11
Diseases of the Lymphatic System, 37 cases = 1·1 per cent.	
Tubercular glands	11
Inflamed glands, not tubercular	10
Myxœdema	1
Various conditions of infrequent incidence	15
Diseases of the Nose, 19 cases = 0·6 per cent.	
Undoubted malingerers, 91 cases = 2·6 per cent.	

Alcoholism.—I should like specially to refer to the cases of alcoholism, many of which are frequently submitted to me for report. In these cases the temptation is to consider the service and ignore the individual. During the past nine years there have been many cases of undoubted alcoholism; none of these have been dismissed peremptorily. I have taken a special interest in each case, and tried to gain the confidence of and assist those who have promised to coöperate with me in helping them to abstain totally from alcohol. In many instances I have been able to bring about total abstinence and restore self-respect. It is difficult to be accurate in dealing with this question; failure is so common, and deceit and falsehood (the consequences of a depraved mental condition) are almost invariably present. Close touch with the heads of departments has, however, afforded me special facilities. The following are the results to date of 43 consecutive cases coming under my care since 1908:—

No relapse. Quite satisfactory. Total abstainer one year or over	15
Total abstainer under one year	5
Relapsed and recovered. Moderately satisfactory. Either total abstainer for a period under 12 months from relapse, or only semi-abstainer	9
Relapsed. Unsatisfactory. Died or lost sight of	14

As statistics go, I think it will be found that these are unusually satisfactory results, which may perhaps be explained by the fact that the men concerned are fully cognisant that their irregularity has been reported to me as medical examiner, and that practically I have the final say as to their retention in the service. Hitherto in every case I have taken full advantage of my somewhat autocratic position, and I find it of much assistance in compelling the exercise of that will power which is so essential to recovery from this disease, but which, from the nature of the complaint, is so difficult to bring into operation. A judicious exhibition, often even a parade of despotic authority, combined with a personal and sympathetic interest (in most cases entailing frequent unofficial interviews), has brought about results which are the best, I believe, that have been published. They are so gratifying that they may well be an incentive to others similarly placed.

Venereal disease and its sequelæ.—Much attention is at present being paid to the subject of venereal disease, and some interest may be found in the following particulars of the cases which have come under my observation:—

A. In the 12,189 entrance cases—

Primary syphilis	23	cases.
Gonorrhœa	5	,,
Urethritis	4	,,
Locomotor ataxia	1	,,
Urethral chancre	1	,,
Syphilitic iritis	1	,,
Gleet	1	,,
	36	(= 0·29%).

B. Amongst the 3667 accident cases there were 2 cases of locomotor ataxia accelerated by traumatism. There was also 1 case of gonorrhœa.

C. In the 3499 cases of sickness:—

Primary syphilis	31	cases.
Gonorrhœa (including orchitis, cystitis, urethritis, and epididymitis)	19	,,
Definite specific history in the following:—		
Arterio-sclerosis, syphilitic	4	cases.
Aneurysm ,,	9	,,
Glossitis ,,	1	,,
Cataract ,,	1	,,
Choroiditis ,,	2	,,
Ptosis ,,	1	,,
Laryngitis ,,	3	,,
Progressive muscular atrophy, syphilitic	1	,,
Tonsillitis, syphilitic	1	,,
Disease of ankle, syphilitic	1	,,
Ulcer of ankle ,,	2	,,
Gumma of thigh ,,	2	,,
Ulcer of knee ,,	1	,,
Synovitis of knee ,,	1	,,
Locomotor ataxia and general paralysis of the insane	51	,,
Gumma of brain, syphilitic	2	,,
Mental aberration ,,	1	,,
Skin disease ,,	3	,,
Paralysis due to syphilis (Also 1 case doubtful syphilitic.)	1	,,
Cerebral hæmorrhage, syphilitic (Out of a total of 29 cases.)	8	,,
Epilepsy, syphilitic (Also 8 cases doubtful syphilitic, out of a total of 36 cases.)	7	,,
Chorea (one case doubtful syphilitic)	—	
Iritis, syphilitic (Also 4 cases doubtful syphilitic, out of a total of 11.)	2	,,
Disseminated sclerosis, syphilitic (Also 1 case doubtful syphilitic out of a total of 10.)	1	,,
	156	(= 4·4%).

D. Of the 2216 medico-legal cases there was definite indication of venereal disease in 19 cases, and strong suspicion of it in at least 6 others.

IV.—*Medico-legal Cases.*

An analysis of the 2216 medico-legal cases in view of their special character would serve no very useful purpose, so I content myself by remarking that I have not discovered anything in them to vitiate any of the deductions I have drawn from my other examinations.

Porchester-terrace, W.

ON A METHOD OF MAKING CULTIVATION MEDIA WITHOUT PREPARED PEPTONES, AND ON A PEPTONE-FREE MEDIUM FOR GROWING TUBERCLE BACILLI.

BY S. R. DOUGLAS, M.R.C.S. ENG., L.R.C.P. LOND.,
CAPTAIN I.M.S. (RETIRED); ASSISTANT DIRECTOR, INOCULATION DEPARTMENT, ST. MARY'S HOSPITAL, PADDINGTON.

IN the past, owing to the ease with which various chemical products could be obtained, bacteriologists have been satisfied to follow blindly a ritual of media-making. With the outbreak of the war, however, the supply of one important ingredient, Witte's peptone, almost universally used in this ritual, was suddenly cut off, and it became imperative—especially in this laboratory, where very large quantities of culture media are being used for the preparation of vaccines for our Army and Navy, and also for the French Army—to look forward and prepare for the time when Witte's peptone was no longer available. The preparation of media without the addition of prepared peptones has had to be provided for in the past; for instance, Haffkine was faced by a similar problem when he undertook to make plague vaccine for the natives of India. Since peptone, being derived from pigs, is abhorrent to a Mohammedan, and the use of beef in any form equally so to a Hindu, Haffkine overcame both these difficulties by autoclaving goat's flesh with hydrochloric acid, and obtained a satisfactory medium.

The method of media-making described below gives constantly a very efficient medium, and has proved in my hands more simple and easier than Haffkine's method. Fresh bullocks' hearts having been obtained, the fat and large vessels are removed. The meat is then finely minced, and to the mince thus obtained from an average-sized heart four litres of water are added. This mixture, after being thoroughly stirred and rendered faintly alkaline to litmus, is heated to between 70° and 80° C. After cooling to 45° C. 1 per cent. of trypsin solution (40 c.c. to the four litres) is added, the preparation of trypsin used being Allen and Hanbury's liquor trypsin co. This, in view of the fact that the preliminary heating has destroyed the antitryptic power of the meat juices, rapidly breaks down some of the albumins present. The trypsin is allowed to act for from two to three hours, the temperature being kept raised by placing the vessel containing the mixture in an incubator at 37° C. The next process is to precipitate the unaltered albumins and to render the broth easily filtrable, and with this in view the mixture is rendered slightly acid with acetic acid and brought to the boil. The coagulated proteids and other solid matters can now be almost entirely separated by straining through a bag of close-meshed muslin.

After rendering the fluid thus obtained alkaline to litmus, a small quantity of calcium chloride (about 0·5 grm. to the 4 litres) and 0·25 per cent. of sodium chloride are added, and the resulting broth is then autoclaved for an hour at 115° C. so as to precipitate thoroughly any phosphates that may be in solution, filtered through filter paper, and then tubed and sterilised as in the case of ordinary peptone broth. In making agar the agar powder is best added before the phosphates are precipitated, as the prolonged heating brings the agar thoroughly into solution.

This medium has the following advantages over that made from beef extracts and prepared peptones:—1. The cost is very much less. 2. The growth of the bacteria both on the solid and liquid forms has proved to be very much more abundant than that obtained on the media usually employed; for instance, it has been found that four times more typhoid bacilli were obtained from agar bottles in a given time containing medium thus made than in the case of medium made from beef extract and Witte's peptone.

A possible explanation of the almost phenomenal growths obtained on this medium is that, in addition to peptones and albumoses, of which Witte's peptone is composed, it contains products, such as the amido-acids, which represent a further breaking down of the albuminous molecule, products which are very likely to be easily assimilated by bacteria and built up again by them into their distinctive protoplasm. The only disadvantage of the medium is the longer time and greater trouble that have to be taken in its preparation.

A Peptone-free Medium for the Cultivation of the Tubercle Bacillus.

The medium, the preparation of which is described below, was the outcome of the following observations. In the first place, it was noticed in cultivating tubercle bacilli on glycerine potato, that frequently an abundant growth of the tubercle bacillus occurred on the surface of the glycerinated salt solution which was contained in the lower part of the tube. Attempts were therefore made to make a broth from potatoes which would give a good growth of such bacilli. On such a broth good growths were frequently obtained, but from time to time an individual brew gave but unsatisfactory results. These unsatisfactory results seemed to rest with some quality of the potatoes rather than with any variation of alkalinity, &c. Noting, however, that the tubercle bacillus seemed readily to assimilate even coagulated albumin, it was determined to try the effect of adding some form of soluble albumin, unaffected by the temperature necessary for the sterilisation of the broth, and with this in view various casein preparations on the market, sold under patent names, were tried in order to ascertain if these, when added to the extract of potatoes, would ensure a medium giving constant and abundant growth of the tubercle bacilli. The preparation giving the most satisfactory results was that sold under the name of "Plasmon."

The medium is made in the following manner. Potatoes are skinned, then passed through a mincing machine, and the resulting pulp is weighed. To each pound one litre of water is added and allowed to extract over night at room temperature. The solid matter is now removed by straining through muslin, and the resulting fluid is heated in the autoclave to 115° C. A sufficient quantity of acetic acid to render the hot fluid faintly acid is next added, which causes the suspended matter, starches, albumins, &c., to agglutinate into large masses, rendering the passage of the fluid through filter paper rapid and easy. The fluid thus obtained is rendered faintly alkaline to litmus, and 0·25 per cent. of glucose, 5 per cent. of glycerine, and 200 cubic centimetres per litre of a 2 per cent. slightly alkaline solution of plasmon are added. On the addition of a white of an egg to each litre a further heating to 100° C. clears the fluid, and on filtration gives a clear brown-coloured broth, which is then distributed in flasks and sterilised by steaming for 30 minutes on three successive days. Agar medium can also be made from this broth, which gives an abundant growth of human tubercle bacilli having but very slight adherence to the agar surface, and in consequence easily lifted off with a coiled platinum wire, and floated on to the surface of broth when it is desirable to grow the organism on fluid media.

THE TRANSPORT OF THE WOUNDED IN WAR.[1]

BY EMM. KONDOLEON, M.D.,
CAPTAIN OF THE RESERVE (ARMY MEDICAL DEPARTMENT); SURGEON TO THE MUNICIPAL HOSPITAL IN ATHENS.

BEFORE dealing with my chief subject I will shortly allude to two special points influencing the surgery during the campaign under consideration.

Shrapnel Wounds.—Indications for Amputation.

The first point concerns the numerous wounds inflicted by shrapnel, which I had the opportunity of observing at Strumnitza in the beginning of the second Balkan war. Near this town an engagement took place about the end of June, 1913, between our infantry and the Bulgarian artillery, which had been accidentally isolated. Almost all the wounds of our soldiers were caused by shrapnel, so that of 200 wounded, who were removed to the hospital of Strumnitza, only two had been wounded by infantry rifle fire and there happened at this time to be no other wounded. Such a concentration of patients wounded only by shrapnel therefore gave us an exceptional opportunity of paying special attention to this sort of injury. Their serious nature, as compared with the wounds inflicted by the bullets of the infantry, is generally recognised. We have observed the severe injuries of the soft parts, the numerous metallic fragments in the brain, and the comminution of the long bones. Infection often complicates this sort of wound.

Dangerous infection is, as a rule, coincident with severe injuries, in which case energetic measures should be taken, but great attention should also be paid to the ordinary discharge of pus from a shrapnel wound, because it often ends in cellulitis. We can take as typical the cellulitis which occurs in consequence of a penetrating wound of the soft tissues. We might be able to prevent this complication if we could deal adequately with the originating cause, which in our opinion is the fact that no distinction whatever is made in military surgery between the dressings for the wounds caused by infantry bullets and those caused by shrapnel. The first we dress by applying tincture of iodine, and the second in the same way. This dressing may practically be suitable for the small infantry bullet wounds, but a shrapnel wound, which is usually infected from the very beginning, has always in its course small gaps surrounded by dead tissues. It is obvious that shaving, cleaning, and the use of tincture of iodine are not sufficient to prevent possible complications under such conditions. Whenever we notice any discharge of pus from the openings we must make adequate incisions and drain the wound. The realisation of this distinction in the dressing of infantry bullet wounds and shrapnel wounds is, no doubt, difficult when many wounded are brought simultaneously and the temporary shelters are very crowded. Under these circumstances we can only divide the wounds into severe injuries, which require much time and care in treatment, and slight cases, which are removed elsewhere as soon as possible. In every other instance this distinction is, I think, practical and necessary, as it prevents serious complications from arising in wounds apparently slight.

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[1] An address delivered before the Medical Society of Athens.

The second point, which I wish also to deal with briefly, concerns the indication for amputation in the surgical stations which are working near the line of action. Modern surgery aims at being conservative, but I fear that the exaggeration of this tendency is not profitable to the wounded, whose chief desire is that their lives may be saved. I am referring to those cases in which a wounded limb cannot be preserved and the life of the patient is in immediate danger from the progress of sepsis. We all recognise the necessity of amputation in such conditions, and yet we often hesitate, either postponing the operation or sending the wounded to the next surgical station, thereby losing the best moment for the operation, which can be performed anywhere and by any medical man, even though he may not claim to be a surgical specialist. If this view of early operation be generally accepted we shall no longer see wounded men arriving from other stations at too late a stage for amputation because of the fatal progress of sepsis, which excludes any hope for a successful performance of the operation.

Transport of Wounded: Injuries of Spinal Cord and of Skull.

I now come to my chief subject, how to transport the wounded from the temporary stations to the permanent surgical hospitals, the latter being usually situated in large towns. The importance of this subject becomes obvious when one considers the numerous difficulties connected with it. Of course, I do not mean to criticise the methods of the army medical department, my intention being merely to deal with the subject of transport from a purely scientific point of view; neither do I propose to speak of transport from the first line of action—through the ambulance—to the temporary hospitals, as this transport is not amenable to fixed rules, but is carried out in any possible way near at hand. But when the transport must be continued from the temporary stations to the permanent hospitals in the towns there is certainly a need for a more definite system.

First, I have to mention the cases which require immediate surgical intervention. Wounded men belonging to this category are often removed without being operated upon. But all urgent cases must be operated upon in the temporary hospitals, even under unfavourable conditions. The fact of many operations being performed with successful results under canvas proves the possibility of the extension of this measure. With regard to the wounded who do not require immediate operative treatment, such as those having fracture of the spine, with injury of the spinal cord, and consequent paraplegia, we think that they should be the first to be removed. Not one of such patients, as far as I could see, sustained any shock during removal, though it was sometimes carried out under lamentable conditions.

There are two reasons in support of the view that these wounded should be removed first; one is that they are not subject to shock, being in a condition similar to that seen in dogs whose spinal cord has been cut across, for these "spinal dogs" show great resistance to shock. If we observe a wounded man during conveyance over a great distance, presuming that he has a high fracture of the spine with complete paraplegia, we shall be impressed by his regular pulse-rate, quiet expression, and good general condition, while the contrary is observed in severe injuries of the abdomen or the limbs. This resistance to shock on the part of men wounded in the spine enables them to be removed without any further delay. The second reason for immediate transport is clear, for the health of these patients is soon broken, bedsores very often appear, infection of the bladder from frequently passing the catheter is inevitable, and if they remain in the temporary hospitals their condition becomes miserable, whereas if they had been removed at the very beginning to the central hospitals in the towns they would be placed under better treatment.

The removal of those who have penetrating wounds of the skull presents more difficulties. Those who are still under the influence of shock must, of course, be kept on the spot until their condition improves sufficiently to permit further transport. Those who have foreign bodies in the brain, with symptoms of pressure, must be immediately operated upon in the temporary station. Mere enlargement of the existing opening will often be all that is required for the removal of splinters and the relief of pressure. There is no reason for making a systematic search for a bullet lodged in the brain. Patients who require to be trephined would better be previously removed to the permanent hospitals, because if they are operated upon in the temporary station their subsequent removal would be very dangerous in the event of the place having to be evacuated.

Wounds of Thorax and Abdomen; Fractures of Extremities.

There still remain the cases which do not require any intervention, and among them those which are considered to be the most serious should be the last to be removed. As regards penetrating wounds of the thorax, I formed the impression that too much apprehension on our part rendered their transport much slower than was really necessary. In a great number of such cases the wounded were transported from the line of action to the next stations in a quite primitive way, without any bad consequence. In saying this I do not suggest that the prophylactic measures of the first few days may be omitted, but I think that men wounded in the thorax may be removed after a few days' rest. Persistent hæmoptysis, which makes possible a more severe hæmorrhage, is regarded as a contraindication, but I do not think that blood-stained sputum is a contra-indication in itself. It should also be considered that the general condition of these patients is very favourable—when no such complication as hæmothorax or empyema appears—so that they themselves insist upon being immediately transported to the towns. For penetrating wounds of the abdomen the regulation precautions are necessary. Men thus wounded must not be removed before the lapse of a week from the day of injury. We often notice as a result of the confusion prevailing in the use of the term "penetrating" that many superficial wounds of the abdominal walls are registered as penetrating. The distinction between these two categories is easy, requiring only a careful examination. When in really penetrating wounds there is no sign of peritonitis after the first week the patients can be removed without danger. In about ten days we can also remove some slight cases of localised peritonitis, provided there are proper vehicles. Two of these cases have been transported from Cresna to Salonica without further complication.

The transport of patients suffering from complicated fractures of the extremities presents many difficulties, especially when the wounds are infected. In aseptic cases immobilisation with plaster bandages which have openings corresponding to the wound is convenient, but in infected cases with abundant discharge of pus requiring frequent dressing the plaster cannot be used, because it quickly becomes foul and has to be taken off in the subsequent stations, thereby impeding the whole sanitary service. Immobilisation with the ordinary wire leg support is always imperfect, and when possible the plaster must be preferred to it. In extraordinary circumstances, where there is no special material for the dressing of fractures, improvised immobilisation, the methods for which must be taught systematically in time of peace, becomes necessary.

Omitting the slight wounds, we may propose the following order as a general scheme of transport: Fractures of the spine must be removed first, fractures of the extremities in the second place, fractures of the skull in the third place, wounds of the thorax fourth, and penetrating wounds of the abdomen last of all.

Means of Transport.

An important question in connexion with transport has reference to the means by which it is best carried out. For the transport of wounded men from the temporary stations to the central hospitals travelling by railway is often possible, in addition to which we have bearers, motor-cars, ordinary carts, bullock carts, horses and mules, and the sanitary service wagons. A certain number of patients will be able to walk. Transport by bearers recruited locally would undoubtedly be the best of all, if it could be carried out everywhere and on a large scale. It is very comfortable for the wounded, who can rest quietly, even when being conveyed a long way, but unfortunately only a small number of wounded can be transported in this manner. It is therefore good to reserve this transport for the severest cases, in which an unsteady movement of any kind may prove fatal. Next come the motor-cars, which are the best means of transport where there are carriage roads, because they secure both a quick and safe transport, although with some of them the occupants have to endure severe jolting. One of the ordinary transport motor-cars can easily hold 10 wounded persons, so that if 20 or 30 such motor-cars are at our disposal we can have 200 or 300 wounded conveyed every day to a great distance. We made use of these transport motor-cars from Cresna to Salonica, and it proved quite a success. For purposes of transport ordinary horse carts and bullock carts must be replaced by motor-cars where possible. Transport by mules is useful in mountainous regions and when the immediate evacuation of a station becomes urgent. The ordinary transport carriages of the sanitary service are, as a rule, uncomfortable and a cause of shock. It would be desirable if they could be replaced by transport motor-cars.

Athens.

A CASE OF ACUTE EXOPHTHALMIC GOITRE SIMULATING ACUTE OBSTRUCTION.

By G. McCALL SMITH, M.B., CH.B. EDIN., F.R.C.S. EDIN.

THAT quite a number of diseases run such an atypical course that their diagnosis presents the very greatest difficulty is only too well known. Fortunately in many cases, as far as the treatment is concerned, the correct diagnosis is of little moment, but occasionally the reverse of this is the case. Many of us have been faced with the difficulty of diagnosing the gastric crises of early tabes from a ruptured gastric ulcer. Every student is well warned of this pitfall, and rightly. That exophthalmic goitre may closely simulate acute intestinal obstruction is not so well known, however.

To diagnose a case as exophthalmic goitre in which there is no exophthalmos and no goitre seems hardly correct. A more correct designation would be "thyrotoxicosis" or "hyperthyroidism." To the latter the objection may be taken that the name implies a definite knowledge of the pathology of the condition which, in spite of great advances, we do not possess. The name pseudo-exophthalmic goitre is obviously objectionable. The pathology of the glandular condition in true exophthalmic goitre is an increase of the functioning part of the gland. That the toxic symptoms are due to the absorption of this excessive secretion is also probably correct, although absolute proof is still lacking of this. The following case explains the heading of this article.

The patient was a domestic servant aged 23. She had had no previous illnesses of any importance. The present illness had begun about a month before I saw her. She thought that she had got a chill, and returned home and went to bed. There were pains in the abdomen, vomiting, and diarrhœa, and she felt feverish. A medical man was sent for, who kept her in bed and ordered milk diet. The vomiting continued in spite of all treatment. A week later she was removed to a cottage hospital, where she was fed by the bowel. She became greatly emaciated, and remained in this condition for three weeks, steadily vomiting. The diagnosis was one of gastric ulcer. The patient was then seen by me.

On examination she was found to be a pale, emaciated, highly nervous, but obviously very ill young woman, complaining of great pain in her abdomen and continuous vomiting. Her pulse was between 150 and 200, and the temperature was 101° F. On examining her abdomen visible peristalsis was present, passing from the region of the stomach on the left across the abdomen towards the cæcal region. Her bowels had not moved for a week; no flatus was passing. The abdomen was slightly distended; its wall was not abnormally thin. She complained of pain and tenderness on palpation, most marked above the umbilicus and to the left. Nothing could be felt, but her muscles contracted whenever the abdomen was touched, so palpation was difficult. Peristalsis when at rest could be stimulated by stroking the abdomen or by giving the patient a drink of water. Examination of the heart and lungs revealed nothing. The thyroid was not enlarged, and no tremor was present. There were no signs of exophthalmos.

The urine was normal. She had missed one menstrual period, but denied the possibility of pregnancy. Leucocytes 10,000. No differential count was done, but a stained film showed no obvious abnormal blood picture. That night she became much worse; vomiting was now fæcal.

Here was a case of fæcal vomiting, abdominal pain and visible peristalsis, a pulse which was practically uncountable, and a temperature of 101°. At first glance the condition appeared to be one of "acute abdomen," probably acute obstruction high up, and calling urgently for surgical intervention. But in many ways the patient was in an exceedingly bad condition for operation, and certain points about the case made one suspicious of the diagnosis. In the first place, although the patient looked undoubtedly very ill she seemed to have a wonderful amount of strength, she could move about fairly freely in bed, and her expression was not markedly indicative of an acute abdomen. A genuine acute obstruction with a pulse like hers would have been *in extremis*, and she hardly gave one that impression. The question naturally arose, Could the condition of the pulse be accounted for in any other way? Hyperthyroidism suggested itself. Having seen cases of exophthalmic goitre terminate by continuous vomiting I suggested that a thyroid toxin might also account for the vomiting. Working on those grounds I gave as my opinion that the case was one of hyperthyroidism and advocated leaving her alone. For several days the vomiting continued, but although having a fæcal odour it was not so markedly fæcal as on admission.

Suprarenal gland extract and tincture of belladonna were given. The pulse remained much the same, and she was fed with glucose and brandy by the bowel. She was then removed to a side room and put behind screens. From that time a marked improvement set in, the vomiting stopped, the abdominal symptoms disappeared, and the pulse improved considerably. After a few days she was given 3 grains of potassium iodide three times a day. A recurrence of the symptoms might have been expected, but no effect was noticed. On examining her neck a fortnight later I was able to satisfy myself that the thyroid gland was increasing in size. She remained in hospital for one month longer, at the end of which time she had gained 1 st. in weight and her pulse when undisturbed was normally about 100. The menses had not returned.

Two months later the patient came to see me. Her eyes were now distinctly prominent and her thyroid markedly enlarged. The pulse-rate was 105. Her hands showed the typical tremor. She had gained 7 lb. in weight, and expressed herself as feeling quite well but very nervous. Abdominal examination revealed nothing; the menses had not returned. There was now no doubt about the diagnosis: she had developed into a typical case of exophthalmic goitre.

According to Plumer the order of onset of the most important symptoms based on the average of a very large series of cases is as follows:—(1) Cerebral stimulation; (2) vasomotor disturbances of the skin; (3) tremor; (4) mental irritability; (5) tachycardia; (6) loss of strength; (7) cardiac insufficiency; (8) exophthalmos; (9) diarrhœa; (10) vomiting; (11) mental depression; (12) jaundice; and (13) death. As a rule the disease runs a fairly definite course. Severe vomiting usually is a terminal symptom; in fact, quite a large proportion of fatal cases die from severe gastro-intestinal symptoms. How exactly the toxin acts to produce vomiting it is impossible to say; probably through its action on the nervous system when an early symptom and akin to the vomiting of the gastric crisis in tabes. As a terminal symptom the gastro-intestinal symptoms are probably due to the long-continued action of the toxin disturbing and destroying the functions of the digestive organs—in much the same way as the poison of alcohol brings about destruction of the liver and pancreas, &c.

Treatment. — Exophthalmic goitre develops periods of remission of symptoms. For that reason we are apt to claim success to our methods which is not really attributable to them. The use of suprarenal gland extract I have tried repeatedly and have failed to get any results. Rest in bed and isolation are probably much more efficacious than the numerous drugs that have been recommended. Porter's method of injecting 2 drachms of boiling water into one lobe of the gland in very severe cases is well spoken of by those who are in a position to judge. Surgical intervention in very acute cases is out of the question.

Cape Town.

OBSERVATIONS ON THE IMPROVISATION OF APPARATUS IN THE TREATMENT OF CERTAIN FRACTURES IN MODERN WARFARE.

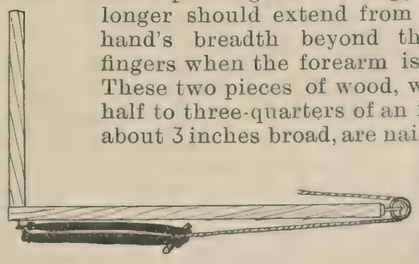
BY J. H. WATSON, M.B., B.S. LOND., F.R.C.S. ENG.,
SURGEON, VICTORIA HOSPITAL, BURNLEY;
AND
T. SNOWBALL, M.B.

III.[1]—FRACTURES OF FOREARM AND METACARPALS.

IT is a well-known fact that fractures of both bones of the forearm in the same plane are apt to be very troublesome if there is not a proper apposition of the fractured ends to one another. If they are displaced towards the interosseous space a bridge of callus frequently fills in the gap and thereby totally hinders the movements of pronation and supination. For this reason alone there is a very useful field for a simple extension apparatus for such fractures. It is hardly necessary to add that in fractures of a single bone no extension apparatus is required.

The method adopted by von Saar at Belgrade was to utilise elastic traction again after the manner of Borchgrevink. A rectangular splint is made of two pieces of soft wood, the shorter piece corresponding to the upper arm. The longer should extend from the elbow to a hand's breadth beyond the tips of the fingers when the forearm is outstretched. These two pieces of wood, which are from half to three-quarters of an inch thick and about 3 inches broad, are nailed together at a right angle. A screw pulley, such as described before, is firmly fixed into the centre of the free edge of the forearm piece and a strong nail is driven from below into the centre of the right angle, leaving about a quarter of an inch projecting. (Fig. 13.)

FIG. 13.



Forearm splint showing elastic traction attached.

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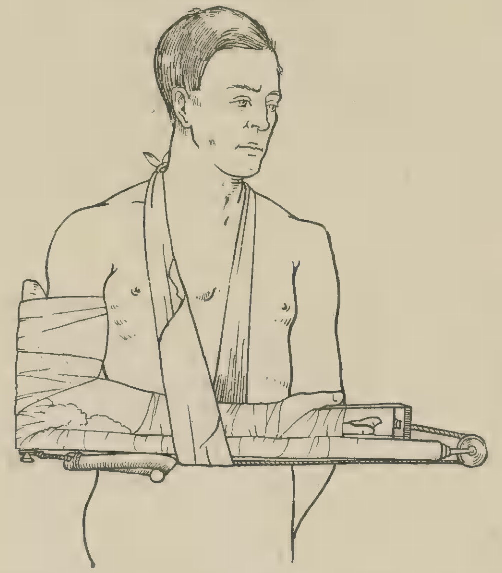
[1] Nos. I. and II. were published in THE LANCET of Sept. 26th (p. 789) and Oct. 3rd (p. 849) respectively.

Before applying the splint an adhesive plaster is fixed to the forearm in the following way. A strip of plaster about 2 inches wide is applied to the volar and dorsal aspects of the forearm and hand as far as may be necessary, leaving a loop which is lined by another piece of plaster in order to allow unimpeded movements of the fingers. A few circular imbricating turns of leucoplast fix the extension strip to the forearm, and additional strips fix it to the hand if required. The extension string is fastened to a round or rectangular piece of wood, and placed in the loop of the forearm strap, which has been previously perforated for the passage of the string. The string is led over the pulley to the under side of the splint, where it is fixed in the loop of drainage tube, as previously described in the case of the arm; but in this instance the suspending nail is driven into the under side of the splint at the centre of the right-angled junction. A simple sling supports the forearm, so that the weight of the apparatus is eliminated. (Fig. 14.)

FIG. 14.



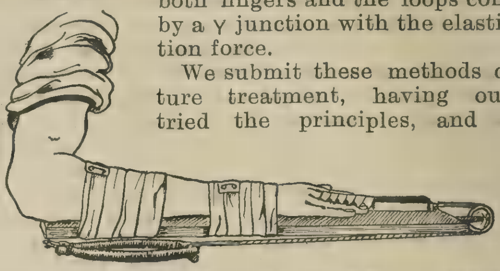
Simple right angle splint applied to forearm with elastic traction.

In applying extension in this way the forearm lies upon the corresponding portion of the splint, which need be only lightly padded, in the position of supination. The mid-position of semi-pronation may be adopted if considered more favourable for the healing of both bones, and for the dressing of any accompanying wounds.

The principle of elastic traction can be simply and efficiently carried out in fractures of the metacarpals by shot, where there is deformity due to the fractured ends projecting backwards and obvious shortening, as follows. A wooden splint, one-third of an inch thick and about the width of the patient's wrist and some two or three inches longer than the forearm, is required. To the opposite ends of this are fixed the requisite suspension nail and screw pulley. The splint is carefully padded on the side to be applied to the forearm—i.e., the under side, the position being one of full pronation. A thin strip of adhesive plaster is placed along the anterior and posterior aspects of the finger corresponding to the injured bone, reaching from the centre of the palm to a corresponding point on the dorsum and leaving a loop for the extension apparatus. The traction plaster is held in place by several circular turns of leucoplast wound round the finger, and if necessary one may be placed round the hand. The splint is now fixed in position to the forearm by several strips of adhesive plaster, which are again covered with ordinary calico bandages to prevent displacement. The elastic traction is attached in the usual way, and the forearm is comfortably slung in a triangular bandage. (Fig. 15.) If two metacarpals are broken extension straps are attached to both fingers and the loops connected by a Y junction with the elastic traction force.

We submit these methods of fracture treatment, having ourselves tried the principles, and having great confidence in their efficiency in suitable cases. Moreover, thanks to the courtesy of Dr. G. F. A. von Saar, one of us (J. H. W.) has seen the various apparatus in use at the Innsbruck Surgical Clinic, and has had the pleasure of observing the excellent clinical results obtained, and of seeing confirmatory röntgenographs. We are not aware that these methods have hitherto been published in the English language, and we are entirely indebted to the writings of Dr. von Saar[2] for the general outline and detail of this paper.

FIG. 15.



Showing application of elastic traction to fracture of metacarpal.
(N.B.—For clearness the usual padding is omitted in the sketch.)

We have to thank Mr. Noel H. Leaver and Mr. G. Grant for the care they have taken in making the various diagrams.

Burnley.

Reviews and Notices of Books.

The Occupational Diseases, their Causation, Symptoms, Treatment, and Prevention.

By W. GILMAN THOMPSON, M.D. London and New York: D. Appleton and Co. 1914. Pp. 724. Illustrated. Price 25s. net.

Dr. Thompson refers in his preface to the fact that this is the first book of its kind to be published in the United States. It is intended primarily for physicians interested in the subject of occupational diseases of modern life and also as a guide for students of social economics, insurance actuaries, and those with special interest in problems of labour legislation and the health of industrial workers. Regarded as a work of reference which, without pretence to exhaustive treatment, gives the main facts about occupational diseases, the book fulfils its purpose with very fair success. It has to be remembered that the concern of the public authorities and of the official medical service in the United States with occupational diseases is much less advanced than in the United Kingdom. Compulsory notification of industrial diseases has only quite recently been introduced, and is at present limited to six States, where the diseases to be reported are mainly limited to poisoning by four metals (lead, arsenic, mercury, and phosphorus, and their compounds), anthrax, and compressed air illness.

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[2] Ueber Kriegmässige Improvisation von Extensionsverbänden bei Extremitätenfrakturen; Kriegschirurgische Erfahrungen aus den Balkankriegen, 1912–13; Zur Behandlung der Schuszfrakturen der Extremitäten im Kriege.

One of the chief merits of Dr. Thompson's work is the wide range of trades and occupations dealt with, and the number of interesting facts detailed in regard to them. These show that there are many incapacitating diseases of much greater frequency and importance than those to which legislative action in America has so far been limited. Preventive measures need not, of course, in all cases, or even in the majority of cases, consist in legislative and administrative proceedings; much can be done by bringing the cardinal points to the notice of employers and workmen, and making progress by educational means as through writings of this nature.

The sections of the volume relate respectively to general pathology and etiology; general remedial measures, prophylaxis and treatment; diseases due to irritants, under which heading toxic gases and anthrax are considered; diseases due to harmful environment; special occupational diseases; influence of alcohol, syphilis, &c., on occupational diseases; there is a chapter on miscellaneous industries which in one or another way entail risk of special illness. There are numerous illustrations of industrial processes, and the book is clearly written and well printed, though its weight avoirdupois is forbidding. So many occupations are dealt with that reference might have been expected to such occurrences as cow-pox in milkers, small-pox among workers at cotton mills, and Dupuytren's contraction among lace workers. "Pitch warts" perhaps merited a fuller description, and there seems some error in the attribution of tetanus to the bacillus mallei. Dr. Thompson advises that bleeding and transfusion should be adopted in all the more serious cases of carbon monoxide poisoning.

Therapeutics, Dietetics, and Hygiene: An Australian Text-book.

By JOHN WILLIAM SPRINGTHORPE, M.D. Melb., M.R.C.P. Lond., Senior Physician to the Melbourne Hospital. In two volumes. Vol. II.: Therapeutics. Melbourne: James Little. 1914. Pp. 1121 + xcvi. Price 25s.

THE first volume of this work was reviewed in THE LANCET of June 13th last. The portion before us has the same real utility and the same defects of quality as the first. Its chief interest lies in the sketch given of the lines of clinical practice pursued in the wards of the Melbourne Hospital, which shows that good standards of precise work are maintained. But in a work of this pretension it is hardly necessary to include over 60 pages of a hospital pharmacopœia of an ordinary type.

An interesting account of mineral springs in the Commonwealth and New Zealand forms part of the chapter on spring and mineral waters. Such springs are few in number in Australia but very numerous in New Zealand, where many are practically unequipped and almost unused. The climatology is carefully considered by a number of authorities, mostly superintendents of sanatoriums, and this section will prove of service for reference.

The book attempts too much. To introduce a few passages on massage and electrotherapy and the mechanical treatment of spinal curvatures is to overload a volume already diffuse, while to attempt a summary of vaccines and serum therapy in 14 pages is a waste of space. We feel about this really industrious and in many ways useful work that the author's labours have not produced a commensurate result, because he has not written upon a sufficiently definite plan keeping a sense of proportion throughout.

Diagnostic Symptoms in Nervous Diseases.

By EDWARD LIVINGSTON HUNT, Instructor in Neurology and Assistant Chief of Clinic, Medical Department of Columbia University, New York, &c. Illustrated. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 229. Price 6*s*. 6*d*. net.

IN this book the main varieties of neurological symptoms or symptom-complexes are handled under such headings as deformities, paralysis, tremors, trophic disorders, gaits, ataxia, convulsions, disturbances of speech, and so on. As a result the student is confronted with lists of nervous diseases in each of which, for instance, tremor may occur, and he may come across them, or some of them, later as affections in which disturbances of gait may occur. Thus he gets but an interrupted view of any particular disease, although, no doubt, he may be able to combine his knowledge of symptoms into a synthetic study of the diseases themselves.

It is questionable whether such methods are profitable. He who is already fairly familiar with neurology might conceivably find advantage in refreshing his memory by consulting such a book of reference as this: it does not disdain tips—e.g., in the Argyll Robertson pupil, "remember the two last letters of the word Argyll—L L means loss of light." Its value, however, would be greater if it were more complete and if there were fewer statements to which exception might be taken. There is a chapter on the eye, but the ear and the labyrinth seem to be ignored; we can find no mention of vertigo. Spinal cord localisation, vertical and transverse, does not appear to be discussed, but this is one of the common diagnostic problems with which the student is faced.

The desire of the author to make his book concise is, no doubt, responsible for some of the misleading statements which it contains. Were it amplified its usefulness would be increased.

A Manual of Surgical Treatment.

By Sir W. WATSON CHEYNE, Bart., C.B., D.Sc., LL D., F.R.C S. Eng., F.R S.; and F. F. BURGHARD, M.S. Lond., F.R.C.S. Eng. New edition, entirely revised and largely rewritten with the assistance of T. P. LEGG, M.S. Lond., F.R.C.S. Eng., and ARTHUR EDMUNDS, M.S. Lond., F.R.C.S. Eng. In five volumes. Vol. V. London, New York, Bombay, and Calcutta: Longmans, Green, and Co. Pp. 619. Price 21*s*. net.

THIS is the concluding volume of the system of surgery which may be called the King's College Surgery, as all connected with it are on the surgical staff of King's College Hospital. It deals first with the surgery of the pancreas, and naturally the main subjects treated are acute pancreatitis and pancreatic cysts. Then follow chapters on the treatment of injuries and diseases of the liver and the biliary passages. In this connexion it is of interest to see it stated that, in cases of operation on the gall-bladder, if jaundice is present, it will be well to give lactate of calcium the day before the operation. The belief in the efficacy of calcium salts in such cases is not at all so widely spread as it was not very long ago; the basis of its administration was theoretical, and practice has hardly supported the theory. The chapter on the surgery of the spleen is short, but contains all that is necessary.

In the section dealing with the surgery of the neck probably the most important portion is that treating of the removal of cervical ribs; the authors describe both the anterior and the posterior operations, but they do not say which they prefer. The section dealing with the surgery of the mammary gland is especially good. The authors speak favourably of repeated courses of X ray treatment over the part from which a carcinoma of the breast has been removed, the first course beginning about six weeks after the operation, and they are inclined to think that this treatment has a deterrent effect on recurrences.

This volume also contains an account of the surgery of the genito-urinary organs; the procedures here are excellently described and fully representative of present-day surgery. The final chapter deals with those operations on the female genital organs which may be found necessary in the course of an ordinary laparotomy.

LIBRARY TABLE.

Walt Whitman's Anomaly. By W. C. RIVERS. London: George Allen and Co. Pp. 70. Price 2*s.* 6*d.* Sale limited to legal and medical professions.—The invitation of Shakespeare's clown, "Will you ha' the truth on't?" is a long time getting accepted. At some future date, perhaps now not so far away, the object of medicine will be recognised by public opinion to be the pursuit of all pertinent knowledge, instead of, as at present, therapeutics—with such prophylaxis as comes up in the course of therapeutically directed research. Then what are now the *Grenzgebiete* of medicine will better their provincial status. That one of them has lately made distinct steps in this direction is, however, probably due to the fact that Freud's work has revealed an interesting addition to the treatment of hysteria and neuroses generally. Those who read Freud soon perceive for themselves that there is implied a working acquaintance with sex problems, a branch of knowledge which, arising in the last 30 years, has rather outstripped general medical cognisance. This is where we think the little work under notice is likely to be useful to medical and medico-legal readers. Its general thesis is that a male sexual invert is a woman in a man's skin, a mental organisation changed in certain directions pervading the whole being; and the suggestion is that inversion is a mistake that nature is particularly apt to make in the case of men of genius or great talent. There is clearly considerable intellectual interest attaching to these facts, while medical men, who do not need reminding of the dangers of extreme democracy, may find here part of the great democratic poet's message rooted in what another critic, in finely perceptive phrase, has called "the instinctive anarchism of the degenerate." The book, though slight, is pithy and discerning, and deserves on the whole the recognition accorded it in important quarters. For ourselves, we find it hard to discriminate how far Mr. Rivers proves his point, or to what extent his "facts" are generally accepted. In any event, the memoir merely adduces one more case, which is far from being the same thing as proving a general thesis. For this reason we regret that the name of the subject was introduced, for the facts we think might quite well have been brought forward in a form so veiled that only those professionally interested and competent to form a discreet opinion would have pierced the veil.

Examination of the Urine and other Clinical Side-Room Methods (late Husband's). By ANDREW FERGUS HEWAT, M.B., Ch.B., M.R.C.P. Edin., Tutor in Clinical Medicine, University of Edinburgh. Fifth edition. Edinburgh: E. and S. Livingstone. 1914. Pp. 212. Price 1*s.* 6*d.* net.—This excellent little book gives the various methods in use for the clinical examination of the urine, blood, sputum, pus, gastric contents, and fæces. The part dealing with the urine (125 pages) is practically a rewriting of the fourth edition of Husband's "The Urine in Health and Disease." The other sections are new. The book is brought right up to date. A very valuable feature is that the fallacies of certain tests are carefully pointed out. The book can be commended to medical students to accompany their practical class work in the subject, and it will be hardly less useful to general practitioners out of touch with modern laboratory methods in clinical medicine. We note that the author quotes the not universally known term "side-room" in the text. It might have been advisable to do so also in the title. It is too suggestive of a misprint for "sick-room."

Bacteriology for Nurses. By ISABEL MCISAAC, R.N. Second edition, revised. New York: The Macmillan Company. 1914. Pp. 179. Price 5*s.* 6*d.* net. —In reviewing the first edition of this work we stated that the author puts the case for a knowledge of bacteriology by nurses extremely well, and produces a clear and accurate, if elementary, account thereof, including directions for so much working knowledge as is necessary for a satisfactory grasp of aseptic technique and an understanding of the sources and *modus operandi* of infection. These remarks equally apply to the present edition; but we still note the statement (p. 11) that "spores possess an extraordinary resistance to heat (70°–100° C.)," to which we took exception in our previous review. For the benefit of the English reader we may point out that "R.N." in the United States stands for registered nurse, not Royal Navy.

JOURNALS AND MAGAZINES.

The Annals of Tropical Medicine and Parasitology. Vol. VIII., No. 2.—This may be regarded as an Entamœbiasis number of the Annals, for of the total 235 pages which are comprised in it all but 10 are devoted to the subject of entamœbiasis in its various aspects. The chief contribution is furnished by Dr. William M. James, physician to the Ancon Hospital, entitled A Study of the Entamœbæ of Man in the Panama Canal Zone, illustrated with six coloured plates. This paper gives a summary of the present state of our knowledge of amœbic dysentery, and supplies also the results of the observations made by Dr. James and his colleagues as regards dysentery in the Isthmus of Panama. The author presents his facts and conclusions on the identification and classification of human entamœbæ more from the point of view of the practising physician than from that of the protozoologist. Although, as a result of his studies, Dr. James is of opinion that there are only two species of entamœbæ found in man—namely, a pathogenic species, E. histolytica, the cycle of which ends in a four-nucleated cyst, and a non-pathogenic species, E. coli, the cycle of which ends in an eight-nucleated cyst—he finds it convenient in writing of the types of entamœbæ met with to call them by the names by which they are commonly known at the present time. So that when writing of E. histolytica, E. tetragena, and E. minuta he desires it to be understood as describing what appears to him to be different types of the same species. Dr. James, however, admits that the classification of species is not yet fully determined, and that this task is one for the protozoologist rather than for the clinician.—The next original article is on the dysenteries in the Canal Zone with special reference to amœbic dysentery, by Dr. W. E. Deeks, chief of the medical clinic of the Ancon Hospital. This latter form of the disease, of which E. histolytica is the specific organism, Dr. Deeks thinks, has probably a water-borne origin; there is, he says, no endemic centre of the malady, and immunity, as we understand it, does not exist. Age, locality, nationality, or occupation plays no part in its etiology. The pathological lesions are peculiar and characteristic. As regards treatment, the author regards amœbicidal irrigations as useless; in his opinion the bismuth-milk-saline method of treatment (which was described in THE LANCET of Dec. 23rd, 1911) gives in almost all instances "splendid" results if administered in the proper way. In a second paper Dr. Deeks discusses the use of emetine in amœbic dysentery. It appears that when he wrote his first paper recommending the subnitrate of bismuth treatment the brilliant successes with emetine obtained by Colonel Sir L. Rogers, I.M.S., in Calcutta had not been published. Dr. Deeks therefore made trial of the new remedy at the Ancon Hospital. His observations show, however, that in 12 patients in whom emetine was used, 6 had relapses, though the drug greatly relieved the symptoms in all the cases. The author has now arrived at the conclusion that a combination of the two remedies, emetine and bismuth, would be more effective. Emetine probably acts as a direct poison to the amœbæ, while bismuth, in all likelihood, has the power of destroying symbiotic organisms necessary for the growth of the amœbæ in the intestinal tract. A third paper is contributed by Dr. Deeks on a six-days' fever in Panama, a malady hitherto unrecognised in the Western Hemisphere. It runs a characteristic febrile course, attended by a rash probably allied to the exanthemata, but the nature of the infection is not yet known. Appended to the paper are seven illustrative temperature charts. We may mention that in THE LANCET of Sept. 13th, 1913, some comments were offered on a preliminary note which Dr. Deeks had published in the *Journal of the American Medical Association* on this new form of fever, the precise nature of which still remains obscure and requires further investigation.

Malaria e Malattie dei Paesi Caldi. Anno V. Fasc. III. June 20th. Via Farini, Rome.—The May–June number of this publication, the last to reach this office from the Italian publishers, contains an article by Professor Arnaldo Cantani, of Naples, on the Action of the Micrococcus Melitensis on the Central Nervous System, and gives details of three cases—one of meningismus, a second of chorea, and a third of psychosis where maniacal attacks alternated with a condition of hebetude.—Dr. F. Giugni, of Rome, contributes a paper on the Vitality and Development of the Leishman-Donovan Body in Cultures. He found that growth took place only in blood media deprived of serum. He is of opinion that the rarity of the parasite in peripheral blood in comparison with its presence in splenic blood may be due to some peculiar property of the splenic serum.—Dr. C. Russo describes his experiments with trypoflavin as a cure for trypanosomiasis.—There are other articles on the Temperature in Ankylostomiasis, the Clinical Course of Mediterranean Fever, Oriental Boil, and the Transmission of Leishmaniasis.

METROPOLITAN WATER BOARD:

EIGHTH ANNUAL REPORT ON THE LONDON WATER AND TENTH REPORT ON RESEARCH WORK.[1]

Dr. A. C. Houston's eighth annual report deals with analyses of London water during the 12 months ending July 31st, 1914. The results are tabulated on the same lines as in previous reports, and they show that, on the whole, the quality of the London water was up to its average. A prominent feature of this, as of Dr. Houston's previous reports, is the emphasis laid on the bacillus coli test. The raw waters used for the supply of London afford a remarkable instance of the wide range of this index. Thus, while 94 per cent. of the samples of raw water taken from the Kent wells during the past year showed no typical bacillus coli in 100 c.c., no less than half of the samples of raw water taken from the Thames and Lea contained this microbe in 0·1 c.c. But in spite of the fact that the fæcal microbe in question is often a thousand times more abundant in the river water than in the Kent water, it is interesting to note that this river water is so purified in practice that over 80 per cent. of the samples of it, as delivered to consumers, contain no bacillus coli in 100 c.c. This, therefore, is the bacteriological standard of purity which Dr. Houston recommends for general adoption in the case of a potable water.

Dr. Houston's tenth report on research work contains a further instalment of his important investigations in connexion with the purification of water. The present volume is subdivided into seven sections, dealing with the following subjects: 1. Search for pathogenic microbes in river water and sewage. 2. Methods for the isolation of the typhoid bacillus. 3. Influence of temperature on the vitality of the typhoid bacillus. 4. Study of streptococci in excremental matters. 5. Value of storage. 6. Lime as a bactericidal agent. 7. Vitality of the cholera vibrio outside the body. This research report should be carefully studied by those who have to deal with water-supplies. In the first place, it is comforting to see that in spite of elaborate and strictly controlled quantitative investigations Dr. Houston has not found either the typhoid bacillus or Gärtner's bacillus in the London raw river water. After detailed comparison, he finds that malachite green solid medium gives best results for isolation of the typhoid bacillus. The annual range of temperature of the London water varies from 5 to 14·5° C. Dr. Houston has shown that the typhoid bacillus survives longer in water at the lower temperature, and accordingly he points out that it is especially desirable that during the five cold months (November–March) the raw river water should be adequately stored antecedent to filtration. A quantitative investigation of the acid-producing capacity of streptococci isolated from the fæces of man and animals respectively does not furnish, according to Dr. Houston, more than somewhat doubtful evidence for the purpose of their differentiation. His experiments on the effect of storage in freeing a water of undesirable bacteria lead Dr. Houston to the conclusion that this beneficial action is due to actual death of these bacteria, and not merely to their mechanical separation. According to the bacillus coli index, ordinary purification of raw river water by storage and filtration improves it about 1000 times; further experiments with Dr. Houston's excess lime method, however, show that by this process raw river water can be purified on a practical scale at least 10,000 to 100,000 times. The report ends with a reprint of the recent work of Major E. D. W. Greig, I.M.S., on the vitality of the cholera vibrio outside the body. Greig's results, which were obtained in India, confirm those of Dr. Houston with the typhoid bacillus in London. Both micro-organisms survive for a much shorter time outside the body in hot weather than in cold.

ANNUAL REPORT OF THE METROPOLITAN ASYLUMS BOARD FOR 1913.

THE latest volume of this valuable series continues the medical, statistical, financial, and administrative reports and tables of previous years, and it also affords further illustration of the continued expansion of the functions which the Metropolitan Asylums Board exercises in connexion with the sick persons in London for whom institutional treatment or care has to be provided.

Mental Defectives.—Children's Institutions.

Accommodation is provided by the Board for both feeble-minded and "improvable" imbeciles and for "unimprovable" imbeciles. The latter, owing to the absence of any outlet for the children as they become adults, require more and more accommodation, and Tooting Bec Asylum, which is used for the adult cases, is now to be extended so as to increase the available beds from 1114 to 1727. Further schemes for the accommodation of the unimprovable children, temporarily accommodated at a hospital intended, and sometimes needed, for infectious disease, are also in progress. The report hints that the "improvable" class, in consequence of the operation of the Mental Deficiency Act, may shortly need new provision also.

The Board is responsible for Poor-law children who are "sick, debilitated, or convalescent," and those who suffer from contagious diseases of the eye and skin

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[1] By Dr. A. C. Houston. London: Charles Straker and Sons. 1914. Price of each 2s. 6d.

It has been found that the special children's hospitals, particularly the Park Hospital, have been overtaxed by cases which are really in no need of the trained nursing and other conditions which these hospitals provide, and an effort has been made, as a result of inquiries made for the Board by Dr. H. E. Cuff, to limit the use of these hospitals as far as possible to children requiring operations, non-tuberculous bone and joint disease, non-pulmonary tuberculosis in its various forms, cases of lateral curvature requiring spinal exercises, and paralytic cases. The Board's hospital at Margate, where excellent results are said to have been achieved in the case of children with tuberculous joints, bones, and glands, is to be rebuilt and enlarged as a sanatorium for children providing 270 beds, largely in open-air verandahs, to which small indoor wards will be adjuncts. Of the children with ringworm in the special section of the Park Hospital, Lewisham, in 1913, 631 were treated entirely by X rays. Dr. H. G. Critchley, the assistant physician in charge of this treatment, states that, taking a date at random and 100 consecutive cases, the number of days elapsing between the date of X ray administration and the date of the certificate of fitness for discharge is 30·2.

Casual Wards: Deterrent Measures.

The policy of placing the different casual wards in London under the Board continues to be justified by the results obtained. The method adopted by the Board is to assist as many as possible of the casual poor without taking them into the casual wards at all, by passing them on to coöperating voluntary agencies, who in many cases have enabled them to return to the normal life of self-supporting citizens. There remains, however, a residuum of "able-bodied and physically fit young persons who deliberately refuse help and have determined to make themselves a burden on the community." The numbers of these persons rise with startling rapidity with any improvement of the conditions under which shelter and maintenance can be obtained at the public expense. The casual wards committee observe that the community undertakes to restrain and deter the drunkard, the petty thief, and the minor criminal, whose offence is much less vital than that of the man who insists on making himself a perpetual public burden, and they urge that restrictive and deterrent measures against all such persons have very ample justification. 879 inmates of casual wards were charged during 1913 at the metropolitan police-courts for neglecting or refusing to work or for other offences, and most of these were convicted, but it may be doubted whether these convictions have the deterrent results which the committee desire to see.

Acute Infectious Diseases.

17,544 cases of scarlet fever were notified in London during the year, and 15,010 cases of the disease were admitted to the infectious diseases hospitals. The case mortality rate was as low as 1·2 per cent., lower by 1·5 than the average for the preceding ten years. In the medical supplement to the report, edited by Dr. F. M. Turner and Dr. J. E. Beggs, the following figures are given in regard to "completed" cases in illustration of the decline in the number of cases of septic scarlet fever.

—	1909.	1911.	1913.
Case mortality	2·33	1·94	1·25
Otitis...	12·70	11·42	8·81
Adenitis (early suppurative)	0·83	0·69	0·17
,, of convalescence, simple...	7·68	6·36	4·95
,, ,, suppurative ...	1·26	1·02	0·77
Bronchopneumonia	0·52	0·45	0·31
Ulcerative stomatitis	0·96	0·73	0·51

The 5076 admissions for diphtheria at all ages included 1998 children under 5; the all-age case mortality was 6·5 and that under 5 was 10·2. This is stated to be the lowest rate on record, 2·4 below the all-age average of the preceding 10 years. Certain cases "certified after the bacteriological test only" have been excluded from these figures. The preparation of diphtheria antitoxin for the Board has continued, and is reported on by Dr. G. Sims Woodhead and Dr. G. E. Cartwright Wood. An interesting appendix by Dr. J. D. Rolleston and Dr. C. R. Macleod, assistant medical officers of the Grove Hospital, describes the technique and advantages of intramuscular injections of antitoxin, and is made the subject of an annotation this week.

The admissions in 1913 for enteric fever were 238; puerperal fever, 58; poliomyelitis, 11; and cerebro-spinal fever, 5. The measles cases admitted were 3400, of which 2744 were children under 5. The all-age mortality rate was 12·6, and that under 5 was 14·6. The Statistical Committee state that it should be remembered that the high mortality rates from this disease at the Board's hospitals are the result of the special class of cases admitted. Unlike scarlet fever and diphtheria, measles admissions are still limited to children of the poorest class and to urgent and necessitous cases recommended by medical officers of health. Similar considerations apply to the 1044 cases of whooping-cough (at all ages) admitted during 1913, of which the case mortality was 13·1 per cent.

As regards the average length of residence of patients who completed their recovery or died at the Board's town hospitals during the year, the figures are for scarlet fever 58·7 days; diphtheria, 57·3 days; enteric fever, 59·2 days; measles, 42·6 days; and whooping-cough, 91·4 days. The averages naturally vary in different institutions. Separate figures are given for those cases which were transferred to convalescent institutions.

Only one case of small-pox was admitted during the year. With regard to Joyce Green Hospital, the main institution set aside for small-pox, Dr. T. F. Ricketts points out in his report that its use during an interepidemic period of diseases other than small-pox has the great advantage that a nursing staff is permanently in evidence and available for small-pox should the hospital be suddenly required for its original purpose. In the present conditions of the nursing service Dr. Ricketts doubts if the necessary nurses could be obtained at short notice.

Tuberculosis.

Various negotiations between the Board and the Local Government Board, London County Council, and London Insurance Committee, as to the provision of residential institutions for tuberculosis, are detailed in the report. The Downs School at Sutton, formerly occupied by sick children, was converted into a male sanatorium and opened in February, 1913, 1213 cases being admitted up to the end of the year. Part of the Northern Hospital was opened in March, 1913, accommodating 192 male and 517 female tuberculosis cases. Reports by the respective medical superintendents are included in the volume, and naturally relate principally to organisation. In regard to the Downs Sanatorium, Dr. A. F. Cameron refers to the great difficulties which have to be overcome in converting an old institution to a purpose very different from that for which it was intended. These difficulties have been particularly great in consequence of the relatively small area of land attached to the institution.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

At the extraordinary Comitia held on Thursday, Sept. 20th, Sir Thomas Barlow, Bart., K.C.V.O., the President, in the chair, licences to practise physic were granted to 122 candidates who had passed the required examinations.

The following communications were received: 1. From the secretary of the Royal College of Surgeons of England, dated July 31st last, reporting proceedings of the Council of that College upon July 30th. 2. From the secretary of the Ninth International Penitentiary Congress, to be held in London in July, 1915, asking the College to nominate a representative upon the National Committee of the Congress. It was resolved to request the President to nominate a representative should the Congress take place.

The College resolved not to hold the usual dinner this year on the evening of the Harveian Commemoration (Monday, Oct. 19th), but that the oration should be delivered as announced.

THE LANCET.

LONDON: SATURDAY, OCTOBER 10, 1914.

The British Pharmacopœia, 1914.

THE publication of a new issue of the British Pharmacopœia is an event of real importance both to medical practitioners and to pharmacists. The Medical Act of 1858, Section 54, enacts that "the General Council shall cause to be published under their direction a Book containing a list of medicines and compounds, and the manner of preparing them, together with the true weights and measures by which they are to be prepared and mixed, and containing such other matter and things relating thereto as the General Council shall think fit." The issue of 1914 is the fifth British Pharmacopœia, the fourth having appeared in 1898. The Council has desired in each issue to afford to the members of the medical profession, and to those engaged in the preparation of medicines throughout the British Empire, one uniform standard and guide whereby the nature and composition of substances to be used in medicine may be ascertained and determined. In the preparation of this edition the Pharmacopœia Committee of the General Medical Council has been throughout assisted by a strong Committee of Reference in Pharmacy, appointed by the Pharmaceutical Societies of Great Britain and Ireland; by highly scientific Reference Committees in Chemistry and Botany; and by official information derived from India and our colonies. It behoves all medical practitioners and pharmacists to make themselves acquainted with the principal changes and additions which have been made in the prescribing and preparation of remedies since the issue of 1898 was published. In another column we publish an article dealing with the subject mainly from a pharmaceutical point of view, confining ourselves here to points of particular interest to those engaged in medical practice.

The first point we have to note is that the metric system is employed for all the pharmaceutical and analytical computations in the volume, and that imperial equivalents are no longer given. This will naturally compel all pharmacists to adopt the metric system, and will at first perhaps cause some complaints, but the final result will naturally tend to international uniformity. In the specification of doses both systems are employed, but there is evidently an expectation that in the near future the metric system will be generally adopted by British prescribers. The older practitioners, not having acquired the use of the metric system recently or thoroughly through work in chemical or pathological laboratories, will find some difficulty in adapting their thoughts to the use of grammes and centigrammes instead of grains or fractions thereof, but students and young medical men have already accustomed themselves to learning the doses of drugs according to the metric system as well as to the more familiar imperial system. When once mastered the former possesses many advantages over the latter. Another significant recommendation is that the symbols ʒj and ℥j should be discontinued. There will certainly be considerable difficulty to many practitioners caused by the adoption of the new style, and it will be necessary for many at first to be exceedingly careful over dosage. And with regard to dosage we are glad to see the prefatory remark: "It must be clearly understood that the 'doses' mentioned in the Pharmacopœia are not authoritatively enjoined by the Council as binding upon prescribers." It has never been sufficiently understood that the dosage of the Pharmacopœia is only intended as a guide. The experience of individual practitioners teaches them the most effective quantities which may be prescribed, and how far the average doses may be exceeded or diminished in particular cases. Doses in practice are frequently larger than those suggested by the official work, and numerous instances will at once present themselves to our readers. For instance, the dose of camphor is given as 2 to 5 grains (using the old system), whereas in cases of cardiac failure, especially in pneumonia, 30 grains may be injected in sterilised almond oil. The medical practitioner is left by the express instructions of the Pharmacopœia Committee of the General Medical Council to exercise his own judgment and act on his own responsibility in respect of the amount of any therapeutic agent he may prescribe or administer. When an unusually large dose is prescribed it is the duty of the pharmacist or dispenser to satisfy himself that the prescriber's intention has been correctly interpreted. A highly important series of alterations will be found in the new edition—namely, the changes in strength of certain preparations. Some of these modifications are discussed by the Pharmacopœia Committee. From the point of view of the practitioner these changes require careful study, notably in respect to tinctures in daily use. Certain of these have been diminished in strength—as, for instance, the tincture of nux vomica—whilst others have been increased, the tincture of strophanthus being four times as strong as before. Attention is drawn to these alterations in a paragraph of different type under the heading of each preparation, so that they are easily detected, the explanation of the change being usually indicated by the statement that the new preparation is of approximately the same strength as the tincture of the International Agreement. The International Agreement is a series of recommendations adopted at an international conference respecting the unification of the formulæ for potent drugs and preparations in the several national pharmacopœias. The conference was held at Brussels in 1902, and the recommendations were adopted in 1906 by the participating states.

It has always been the custom to freely employ contractions of Latin words in writing prescriptions, and we are glad to see that the difficulties arising from the vagaries of prescribers are now taken note of. Hitherto the form and extent of such contractions have been left to individuals. Now an attempt has been made to arrive at uniformity, and in the new Pharmacopœia is a list of abbreviated Latin names of official drugs. Whether these abbreviations will meet with general adoption is certainly open to doubt, but if they gradually come into use a source of confusion will be avoided. There is strong evidence throughout the whole book that the greatest care has been devoted to its compilation, and the thanks and congratulations of the profession are due to the members of the Pharmacopœia Committee of the General Medical Council, who have been entrusted with the arduous undertaking. The Committee has very rightly expressed to the Council its high appreciation of the manner in which Dr. NESTOR TIRARD has performed his responsible duties as senior editor of the British Pharmacopœia and secretary to the Committee since his appointment to the office of secretary in 1895. This testimony will be supported by the medical profession at large.

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The German Medical Profession and Preparations for War.

MOST of the letters which the American medical journals are wont to publish from special correspondents in Germany have ceased to appear, but the *Journal of the American Medical Association* has published a letter from a contributor in Berlin dated August 8th but delayed in transmission. From this it appears that not only the regular army surgeons, but also the whole reserve, were immediately mobilised. In addition, a large number of civil practitioners, some of whom have performed military service, while others have not, have placed themselves at the disposal of the War Department, mainly, it is said, for service in home hospitals when these are organised. Calculating on the basis of the Franco-Prussian war, it is estimated that there are 12,000 practitioners serving the army. Senior students are being excused their final examination in order that they may serve with the army as surgeons, and these are perhaps the medical men referred to in a communication which we publish elsewhere from a correspondent writing from Switzerland. To meet the shortage in civil practitioners which might be created the representatives of the profession in the neighbourhood of Berlin and in other districts have required practitioners at home to take over the practices of their colleagues at the war free of charge. Loans are also being issued by the medical organisations to needy families of practitioners without charging interest, and the funds of the Leipziger Verband, raised for the insurance fight, and amounting to about £50,000, have been devoted to the same purpose. The German public is maintaining a fund to provide care for the wounded; this is said to have reached a sum of £50,000, including a contribution of about £5000 from the KAISER, within the first ten days of mobilisation. No doubt the fund has by this time reached a high figure, as undoubtedly the numbers of wounded are very large.

For the reception of the wounded arrangements very similar to our own have been made. There are the military hospitals and also the State and municipal hospitals. Private hospitals and the castles of the nobility have also been offered freely. On July 31st, before war had been declared between Germany and Russia, an Imperial Order was issued forbidding the export of material for dressings and remedies, as well as surgical instruments and apparatus, until further notice. On the same date a list of articles included in this embargo was published. These steps immediately produced a rise of prices in Austria, where the wholesale druggists issued a circular pointing out that this was inevitable. An American correspondent of the *Journal of the American Medical Association* calls attention to the fact that, owing to the departure of their employees for active service, most of the surgical instrument factories in Germany are closed, and points out that this is America's opportunity. British manufacturers of surgical instruments are also realising that a chance is being offered of securing foreign and home orders that have hitherto gone to Germany, though the reduction of prices to the German scale will certainly cause considerable difficulty in some directions.

Annotations.

"Ne quid nimis."

THE ROYAL SOCIETY OF MEDICINE AND THE WAR.

THE influence of the war is making itself felt everywhere. A most noticeable feature in the Calendar of the Royal Society of Medicine for 1914–15 is the marked reduction in the total number of section meetings announced for the forthcoming session. The reason is obvious. A war of the present magnitude not only calls for a large increase in the establishment of regular medical officers at the front, but Red Cross and other voluntary societies, both abroad and at home, take away from civil life a considerable number of medical men. Then there is a vast number of Territorial medical officers called up, and a great deal of administrative work being done to which all classes in the medical profession are freely contributing their share in personal service. The patriotic response to the call of the nation has been quite as enthusiastic in the medical profession as in any other walk of life, and we may add with pardonable pride that from all quarters comes a whole-hearted testimony to the value of its services and to the competence and devotion to duty of its members. The exiguousness of this year's calendar of the Royal Society of Medicine is thus honourably accounted for. But the temporarily unproductive season of sowing will produce in the future a richer harvest, probably, than has ever followed a war—a harvest of observations and of medical and surgical principles founded thereupon, which will extend scientific knowledge in its application to the healing art. Thus not only military medical science but suffering humanity at large will derive incalculable benefits. All honour to our medical soldiers, who, as the published casualty lists demonstrate, while engaged in the saving, not the destruction, of life, cheerfully and bravely pay toll of their own body in a proportion nowise inferior to that of their "combatant" comrades. The society's programme is, however, by no means a negligible one, in spite of the difficulties mentioned, and it may be worthy of special notice that one of our Indian colleagues, Professor Chunder Bose, D.Sc., of Calcutta University, is announced to give a demonstration before the Fellows on Oct. 30th, at 5 P.M., on the Modification of Response in Plants under the Action of Drugs. We trust that an adequate attendance will reward him.

THE CULT OF ÆSCULAPIUS IN GREECE AND ITALY.

IN the Proceedings of the Accademia dei Lincei Signor A. Maiuri once discussed an inscription upon an ex-voto set up in the sanctuary of Æsculapius upon the Esquiline hill in Rome. The inscription occurs upon the base of an offering representing Æsculapius as an infant, and erected, so the inscription states, by Nicomedes, a physician who is known also from a previously edited Greek inscription. The date of the text, if it could be ascertained with certainty, might fix the time of the building or rebuilding by Diocletian of the temple of Æsculapius, inside Trajan's Baths; but the dedication by Nicomedes may be a copy of an ancient text, and the statue also a replica of a former one executed to be placed in the Diocletian temple in place of one known to have been in an older shrine of the god of healing in Rome. M. F. Versakes, who is endeavouring to establish with greater accuracy the topography of ancient Athens, while tracing the partly covered foundations of the outer wall of the Asclepieum there, came upon those of a still earlier sanctuary beneath them. These enclose a larger space than the Asclepieum boundary, and so mark the precincts of the older Eleusinium. The first shrine of Asclepios was probably in the western part of this larger enclosed space, but after the god was invited to Athens as guest and protector he appears to have appropriated most of the eastern part of the Eleusinium, leaving the western space, near the entrance to the Acropolis, to serve as the Eleusinium for later times. Some years ago, from very ancient Greek inscriptions discovered in a small temple ruin upon the Acropolis at Athens, Herr Koerte considered it proved that the god of healing, of whose worship Sophocles was a priest, was Amynos, who in B.C. 420, on the introduction of Asclepios, was associated in worship with the latter deity, and with Hygeia. Sophocles then became an official of the Asclepios cult. In a recent number of the *Journal of the German Archæological School at Athens*, however, Herr Schmidt has endeavoured to show that the medical deity to whom Sophocles was first a priest was Halon, who is to be identified with Halissothius. The cult, like those of many early deities of healing, was connected with a spring. The Latin legend sets forth that in B.C. 293 an oracle commanded the Romans to send an embassy to Epidaurus to find out what god was adored there, and that in consequence of that deputation Æsculapius came to Rome in the form of a serpent. This story may have originated from a statue of the deity having been transported to Italy bearing with the deity's own image his customary attendant serpent. As an interesting commentary upon this theory the evidence derivable from inscriptions found in Italy tends to show that Æsculapius did not, as was stated by Roman annalists, arrive in Rome direct from his most important and ancient shrine at Epidaurus, but by some more circuitous route and from some intervening sanctuary, probably in Southern Italy. In support of this view it is noticeable that in the dedicational inscriptions to him found in his early shrine upon the island in the Tiber his name is spelled Aiscolapio, indicating that his cult came there from some Greek sanctuary whereat it was written Αἰσκλαπιός. Now this spelling had disappeared at Epidaurus as early as the fifth century B.C., and had given place to 'Ασκλαπιός, later 'Ασκληπιός. The route by which the worship of Æsculapius really reached Rome appears to have been *viâ* Tarentum, for an inscription upon a vase from that place spells the name Aislapi. Moreover, Varro, when writing of a picture representing a chariot race in which the contestants are Tarentines, tells us the scene was at an old temple of Æsculapius. Again, Julian, in the fourth century of our era, wrote of the Æsculapian cult as coming from Ionia to Tarentum and thence to Rome, and as the peace with Rome and Tarentum was made in B.C. 293, this agrees with the date of the legendary arrival of the deity in Rome from Greece. It would seem likely, therefore, that the worship of Æsculapius came to Tarentum, in Italy, from Greece at a very early date, while the deity's name was spelt in its archaic form, and later journeyed up the Italian peninsula from the south to Rome.

THE INTRAMUSCULAR INJECTION OF ANTITOXIC SERUMS.

A STRONG plea for the intramuscular rather than the subcutaneous or intravenous injection of antitoxic serums is advanced by J. D. Rolleston and C. Macleod,[1] who have employed it with success during the last six months in 339 patients with diphtheria. It is pointed out that the absorption of the antitoxin into the blood is, naturally, most rapid when the serum is given by intravenous injection; but the absorption after deep injection into the muscles of the thigh is only a little less rapid, and proceeds very much—from 3 to 20 times —faster than does absorption after subcutaneous injection. The technique advised is very simple. Without preliminary washing the outer side of the thigh in its middle third is painted with a 2 per cent. solution of iodine, the needle is driven deep into the body of the Vastus externus, and the injection is given in the ordinary way. 20,000 units, or 50 c.c., can be readily injected thus even in small children. Directly the needle has been withdrawn after injection the site of puncture is again painted with iodine solution and a collodion dressing applied. The thigh is to be preferred to the gluteal region, not only because there is less probability of injuring important vessels or nerves, but also because the thigh muscles are much more compact and exercise greater pressure on the injected fluid, rendering absorption more rapid. No suppuration was noted after any of the 412 injections administered. On the other hand, the benefit of the rapid absorption thus obtained was shown by the lesser incidence of post-diphtheritic paralysis, especially of a severe kind, in the patients treated by this method.

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[1] British Journal of Children's Diseases, London, 1914, xi., 289.

SUPERSTITIONS IN TIME OF WAR.

TERRIBLE as it is, a state of war has certain compensations for the student of custom, for it often leads to a recrudescence of interesting superstitions concerning self-preservation and health. These mostly date from a remote antiquity. The wearing of charms, for instance, and the employment of various forms of mascots to ward off death or disease are very ancient, and are still not unknown among those European soldiers whom primary education has not sophisticated. The scapulary, or fragment of holy cloth, is worn next the heart by all kinds of fighting men, whose ancestors marched in procession under banners that were supposed to ward off plague when epidemics were raging in mediæval cities. But it is not only in the tented field that primitive superstitions are reborn. Relics of antique custom and belief spring up almost everywhere in periods of stress such as the present. From Dorsetshire, for instance, home until lately of "conjurors" and "wise women," who acted as tribal medicine men among a peasantry of Goidelic descent, there comes to us anonymously a "snowball" prayer, which we are asked to copy out nine times and to forward to nine different destinations within nine days." "This prayer," says the anonymous sender, "has been sent to me and is to be sent to all the world. It was said in ancient times that all who passed it by would meet with some misfortune, and that all who wrote it would be free from calamity." It is a simple non-committal prayer, but the manner of its transmission savours a little of blackmail. It would be interesting to know whether such prayers are peculiar to times of national calamity such as those of war or epidemics. A cumulative prayer might certainly have been employed by the pious as a prophylactic during the diffusion of, say, the Black Death. But at present we can find no instance of such.

THE LEPROSY PROBLEM IN THE UNITED STATES.

THE August number of the *Ohio State Board of Health Monthly Bulletin* contains an editorial on leprosy in which reference is made to the reported occurrence of several cases in that State during recent years. The writer of the article estimates that there are at the present time 3,000,000 lepers in the world, two-thirds of whom are Chinese and 200,000 live in India, the remainder being scattered irregularly throughout other countries in the eastern and western hemispheres. It is said that there are in the United States some 500 persons suffering from leprosy, Louisiana, California, New York, and Minnesota being the States especially involved. The precautions taken to prevent the spread of the disease are not uniform nor are they effective in all instances. Fears are expressed that if proper measures be not taken there will be a marked increase in the number of cases during the next few years. A Bill has been recently introduced into Congress for the establishment of a national asylum for leprosy, or "leprosarium," as it is termed in some American quarters, to be located in a situation selected by the Surgeon-General of the United States Public Health Service. The Bill, however, does not appear to have aroused much interest in the minds of the people's representatives, and fear is expressed that the measure may be shelved unless public attention is strongly directed to it by sanitary workers and medical practitioners. As leprosy may become a real problem to be faced in the near future by the American people, now would appear to be the time to attack it. The passage of the Bill through Congress should facilitate the safe disposal of a menace to the inhabitants of the United States.

ASTEREOGNOSIS AND DEJERINE'S ROOT SYNDROME.

THE later work of several French neurologists, especially Dejerine, has emphasised the clinical significance of loss or diminution of form perception. The term agnosia, perhaps, is better, as this more aptly limits the sense of stereognosis to inability to recognise objects because of lack of information about them, and excludes the factor of judgment. The factors responsible for astereognosis are mainly deficient tactile and deep sensibility—depression, that is to say, of the two main sensory channels of information to the brain. It is usually necessary for both these senses to be depressed; deep sensibility alone may induce agnosia. Additional causes of agnosia may be found in certain forms of cerebral hemianæsthesia; in a few cases where a lesion damages the bulb, and especially when a lesion exists just behind the ascending parietal convolution (Wernicke, Milles, and Weisenburg). Finally, there are cases of agnosia due to insufficient education of stereognosis, such as occurs in infantile hemiplegia or brachial monoplegia (Pélissier and Regnard). The practical value of astereognosis has lately been especially emphasised by Dejerine in that its detection, indicative of depression of deep sensibility, facilitates the diagnosis of a new syndrome, termed by him the "syndrome of the long root fibres of the posterior column." Such a syndrome presents some resemblances to tabes dorsalis; it reveals, however, important and significant differences which have a definite anatomical basis. In this syndrome there may be ataxia of the limbs, but the sensibility is different from that of tabes. In tabes both deep and superficial sensibility are depressed; in Dejerine's syndrome deep sensibility is markedly depressed, as evidenced by agnosia, but tactile sensation is normal. The explanation of this difference is this. Tabes is essentially a posterior root lesion, and as such damages the transmission of all forms of sensory impulses, not only those of superficial sensation, touch, pain, and temperature, which pass into the cord by short and medium length fibres, masking rapidly in this way the posterior horn cells, but it also injures the long fibres of the sensory tract, which convey deep sensations and which do not immediately mask the horn cells. In Dejerine's syndrome, on the other hand, since superficial sensibility is preserved, it is suggested, with the support, in one instance, of pathological examination, that the long root fibres are alone implicated. The etiology, consequently, is different in the two conditions. Dejerine's syndrome is not of syphilitic origin; it is rather a combined sclerosis of the cord of subacute type, and may follow acute infections or blood diseases. Since its first description by Dejerine other cases have been reported (Souques, Jumentié), and its clinical recognition may not be without significance in relation to its rational treatment.

A COLLEGE OF AMBULANCE.

A VALUABLE development of amateur ambulance and "first aid" work has taken place in England in the last two years, but it is doubtful if the country realises how much it owes to Mr. James Cantlie in this matter. That debt has, however, been well acknowledged by the real workers in this movement. At a recent meeting held at the Polytechnic, Regent-street, W., it was proposed to establish in Mr. Cantlie's name a College of Ambulance, at which a more systematised and special instruction may be given in such work than is at present available. By the generosity of Mr. James Boyton, M.P., the college is to be housed in Vere-street in a satisfactory manner. The equipment of the college will include a museum of apparatus and models of contrivances employed in modern scientific ambulance work. Demonstrations and classes are to be systematically given on subjects chosen from time to time, and courses of instruction will be held for medical officers, commandants, and other officers engaged in this service. It is further proposed to institute diplomas in this subject and to affiliate the examinations of the various existing bodies. The proposal will meet with a ready welcome from all those engaged in ambulance work. We do not welcome with any particular favour the creation of diplomas in special subjects allied to medicine, but if they will be useful in raising the standard of "first aid" work we have nothing to say. The more enthusiastic these workers are, the more they will feel the limitations of their own knowledge and the lack of a higher plane of instruction, while the institution of a hall-mark will show that such lack is being supplied. But the improvement of the scientific aspect of first aid to the injured is not the whole matter presented to the minds of Mr. Cantlie and his friends. They seek to embody with that improvement the formation of a "humanitarian corps" to render first aid to those in need; to revive in a material age a successor to the two well-known bodies which both had origin from plague and pestilence, the Parabolani of the Alexandria of the reign of Gallienus and the Frati della Misericordia of Florence of the thirteenth century.

HUNTERIAN SOCIETY.—The session of the Hunterian Society will open on Wednesday, Oct. 14th, when Sir Dyce Duckworth will deliver the first Hunterian Society lecture on the Patient and the Disease, at 9 P.M. The meeting will take place at the hall of the Worshipful Company of Barbers, Monkwell-street, E.C. All members of the medical profession are invited to attend.

THE MANCHESTER RADIUM COMMITTEE.—In spite of many other matters that require attention in this unwonted period of activity the radium question in Manchester is being kept well in view. The Radium Committee, which raised about £31,000 for the purchase of radium, have secured a large supply which was intended for German hospitals. From Pittsburg radium to the value of £15,000 has been ordered and will be delivered in a few days. The new radium department at the Royal Infirmary will be opened at the beginning of November.

A NOTE UPON THE WOUNDS OF THE PRESENT CAMPAIGN.

BY G. H. MAKINS, C.B., F.R.C.S. ENG.,
CONSULTING SURGEON TO THE FORCES.

PERHAPS no greater surprise has been experienced than the nature of the wounds met with in the present war. The relative frequency of wounds from bullets of small calibre and those inflicted by shrapnel or fragments of shells which was observed in the South African war has been actually reversed. Moreover, of the limited number of bullet wounds a considerable portion have been inflicted by machine guns of the Maxim type and not by rifles.

A survey of the serious wounds in any hospital forcibly reminds the observer of the water-colour drawings made by Sir Charles Bell, and preserved at the Royal Army Medical College, and he seems transported to the era of the Peninsular war or of the Crimea. There is, in fact, little difference between wounds inflicted by the German shrapnel and those of the round ball fired from the old-fashioned musket.

Recent experience as to the course taken by bullet and shell wounds respectively has been fully confirmed. Wounds produced by the small calibre bullet maintain an aseptic condition if uncomplicated, while shrapnel and shell wounds without exception become infected and suppurate. The mere occurrence of suppuration in the case of even extensive wounds of the soft parts has led to less serious consequences than might have been expected; the sloughy surfaces rapidly clean up, especially under the influence of an iodine bath (ʒi. to the Oi.), and the patients, after a couple of days' rest in bed, show wonderfully little sign of constitutional infection. This is also the case in many of the compound fractures, although it is difficult to gauge how long and tedious their course to ultimate recovery may prove.

Nature of the Wounds.

The nature of the rifle wounds differs little, if at all, from that observed in the case of the Lee-Metford or dome-shaped Mauser bullet, except that the openings are of slightly larger size. The comparative infrequency of bullet wounds accounts for the fact that isolated nerve and vascular injuries are not common.

The wounds produced by the shrapnel balls vary in importance with the velocity retained at the moment of impact; some merely bruise, while others penetrate, and others, again, produce injuries of the most severe "explosive type." The entry wounds are comparatively small, often of the slit or gutter type, while the exit, especially where the bones are near the surface, as in the forearm or leg, may be a large mass of extruded lacerated muscle with numerous fragments of the comminuted bone exposed upon the surface. Such wounds are undoubtedly far more common than was the case in South Africa, and although some may be due to rifle bullets, the men themselves are confident they were produced by shrapnel. The patients also attribute extensive lacerations of the soft parts without injury to the bones to shrapnel bullets, but it seems obvious that these have been caused by fragments of the case or of high explosive shells. Such fragments penetrate, sometimes leaving a narrow bridge of skin over an extensive laceration of the subjacent soft parts. When they strike the bones a deep wedge-shaped groove is cut, numerous fragments of the bone adhering to the soft parts, while the extremities of the cut bone sometimes present the appearance of a fracture of cane, actual threads of bone projecting into the wound. Lodgment both of bullets and shrapnel balls is comparatively common, and contour wounds of the chest and head are not rare.

Certain special characteristics due to the use of machine guns and shrapnel are very striking. Thus a man struck by a machine gun may have a line of wounds passing from right to left across the body; in one case five separate wounds at the same level were distributed across the chest. Again, when exposed to shrapnel fire, where the shell bursts low, a very large number of balls may strike the same individual; as many as 34 wounds of varying severity have been counted on the body of one man. In spite of the fact that no separate wound is of any severity, such multiple wounds cause extreme shock, from which many of the patients die, while others take some days before reaction is complete.

The vast majority of the wounds do well, the bullet wounds of the soft parts taking the same uneventful course already familiar. In the more serious injuries due to shrapnel or fragments of shells, a few days' rest usually suffices to reinvigorate the patients; there is little evidence of constitutional infection either in the general appearance, the temperature, or the pulse-rate, and the men eat, drink, and sleep well. It is also very remarkable how little the majority of the men are affected psychically by the grave conditions, both bodily and mental, to which they have been exposed for some weeks.

Wound Complications.

Suppuration and a variable amount of sloughing of the soft parts are the rule. After a few days the most striking feature is the rigid eversion of the skin margin of the wound which persists for some time. When the wound is a deep circular one the resemblance to a crater in a malignant growth is very great, but in a short time the edge softens and flattens down, the wound itself then becoming covered with large masses of soft granulations which bleed freely.

In a certain proportion of cases the result is more serious, especially in men who have lain out a long time and suffered during transport. A spreading gaseous cellulitis develops which rapidly extends the whole length of the limb to the trunk. The parts above and below become rapidly involved by a soft doughy œdema first evident along the line of the main lymphatic trunks, and spreading eventually through the entire thickness of the limb. The tissues are often crepitant, and a dark reddish discolouration appears over the dependent parts. Meanwhile abundant sanious pus and bubbles of very stinking gas escape from the wound itself. The white tense limb with marbling on the surface characteristic of infections with bacillus aerogenes capsulatus I have not seen. The bacteriology of these wounds is now being worked out. The resulting gangrene is difficult to treat by amputation, as the flaps rapidly assume the condition of the gangrenous part removed. When temporised with the gangrene shows a tendency to localise itself, mummification commences, and if free enough exit for the discharge can be provided a chance of a later operation is gained. Gangrene of this character is responsible for a very considerable mortality.

Tetanus: Prophylactic Use of Serum.

A very serious complication of wounds is the development of acute tetanus, running a very rapid course, but not marked by very severe spasms. This as a rule develops during the first week after the reception of the wound, but sometimes as late as the tenth or fifteenth day. The initial source of infection is to be traced to the soil; it has been suggested that the trucks forming the ambulance trains and straw used for bedding down the patients might be responsible, but for this no evidence exists, and many patients have developed the disease prior to transport. The scourge is affecting the armies of the Allies and Germany in equal degree of severity. An attempt to control its development by the administration of prophylactic doses of serum to all patients with severe open wounds as soon as they are brought in from the field is now being made.

There is no doubt that these complications are the direct result of difficulties of collection and transport of wounded attendant upon the military conditions under which fighting is now taking place. Many of the patients lie in the trenches until the darkness of night allows of their removal; their clothes are infiltrated with mud, while the same shell which has caused the wound often brings down the side of the trench and the injured limb may be covered with soil. Again, the fragment of shell itself is commonly fouled with soil. Abundant opportunity thus exists for a primary infection of the wound of a very gross nature by the organisms of the soil. One has only to look over the neighbouring fields to appreciate the amount of manure with which the soil is treated, since the agriculturists are now placing the manure on the fields behind the fighting line prior to ploughing it in. One may well look back with envy to the clean soil of the South African veld, much as the dust was then regarded as a bugbear.

Wounds of Head, Face, and other Parts.

A large majority of the wounds of the head are the result of injuries caused by shrapnel balls. The German shrapnel is a little smaller in calibre than our own, and cast of lead apparently hardened by some alloy; the tangential wounds are often wide grooves in the scalp with considerable comminution of the bones. When striking directly the ball rarely passes deeply, often lying on the dura, or if it perforates the latter not passing deeply into the brain. Some of the tangential wounds are accompanied by very extensive brain laceration. The fact that most of the wounds are infected before the patients reach the hospital renders them unfavourable cases to deal with at once, but the local conditions as a rule rapidly improve, and then later operations can be undertaken. Wounds of the face and jaws are very common, also extensive injuries of the palate. Shrapnel balls pass through the cheek by comparatively small openings, often of the slit form, while the alveolus or palate may be widely damaged. No special features are presented by the chest injuries, beyond the fact that they are generally more severe than those seen in South Africa, and I think the association of spinal complications without evidence of the ball having actually traversed the vertebral column is more common. A small proportion of perforating wounds of the abdomen which have been accompanied by no untoward symptoms are seen in most of the hospitals. In all these cases the injury has been caused by rifle bullets. Shell wounds of the sacral region are not uncommon and are very distressing; in some the spinal canal is laid open, others are complicated by incontinence of fæces. It is a suggestive fact that few similar injuries of the anterior wall of the abdomen come into hospital, although an occasional lacerated wound with hernia of the omentum has been seen.

The rarity of division of individual nerves and large blood-vessels has been already remarked upon. After passing through more than a dozen large hospitals I have only seen two false aneurysms, one an arterial hæmatoma of the femoral, and one arterio-venous injury of the posterior tibial vessels. Fractures are numerous and severe, accompanied by large wounds and much comminution, while injuries to the joints are of a gross nature and almost without exception complicated by fracture of the articular ends of the bones.

Transport Difficulties.

The difficulties attendant on the transport and treatment of the very large number of wounded have been in themselves immense, and have been further enormously aggravated by the complications dependent on the early backward movement of the troops. Happily the period of more leisurely advance has allowed the establishment of a large number of hospitals in suitable positions, and the heavy task which has devolved upon the medical service of the army is in some measure eased. The problem has been faced with energy and devotion by all concerned, and unfortunately death has exacted a heavy toll on the medical officers employed with the advanced troops.

THE BRITISH PHARMACOPŒIA, 1914, FROM THE PHARMACEUTICAL POINT OF VIEW.

JUDGED from the pharmaceutical point of view the new Pharmacopœia stands on a much higher level than its immediate predecessor. This was to be expected, in view of the fact that during the 16 years that have gone by since the last edition was published much progress has been made in the science of pharmacy; improved processes for determining the precise quantitative composition of drugs have been devised, as well as more accurate methods for detecting the presence of impurities, while in the manufacturing laboratory much has been achieved that is usefully reflected in the new Pharmacopœia. To those who are not quite so familiar with the 1898 edition as they should be the new work will, perhaps, at first sight, seem to differ in a not very important degree from the one it supersedes, but a careful comparison of the two volumes dispels this impression.

Changes in the New Pharmacopœia.

On every page and practically in every monograph changes—some of them based on rational grounds, some rather subtle—have been introduced, and there is hardly a pharmaceutical or analytical process that has not been revised, if not fundamentally changed. The most noticeable alteration, but not the most important, is the discarding of the imperial system of weights and measures in the working directions to pharmacists and analysts. In the last edition both the imperial and the metric systems were employed for computations, and if the opinions of pharmacists were asked it would no doubt be found that in 99 cases out of 100 the metric figures were never used. Presumably the General Medical Council had sufficient reasons for enforcing this change in pharmaceutical practice, but it is not likely to be popular with the older school of chemists, who would have preferred to be allowed a privilege similar to that which has been accorded to medical practitioners for whose benefit doses are stated in both systems. Indisputably, there are sound reasons why the metric system should alone be used in medicine and pharmacy, but the transitional period might possibly have been prolonged a little. Presumably the Council foresee that in the edition which will supersede the Pharmacopœia of 1914 even doses will be given solely in the metric system, and it might therefore be wise for prescribers gradually to accustom themselves to thinking in grammes and centigrams and mils and decimils; "mils," by the way, is the short designation for millimetres—and a common-sense one too.

It is noted in the valuable preface to the work supplied by the Pharmacopœia Committee of the General Medical Council that the "doses" mentioned in the Pharmacopœia are not authoritatively enjoined by the General Medical Council as binding upon prescribers. This has always been understood, but it is just as well that it should be made the subject of an official statement; and incidentally it may be pointed out that medical practitioners would save dispensers from many a perplexity if in ordering unusually large doses they made it clear in some way or other that the large dose was intended, otherwise the doubt might arise as to whether it was due to a slip of the pen. Those practitioners who intend to prescribe in terms of the metric system will, of course, cease to employ the symbols for ounce and drachm; but it will be interesting to observe how many of those who persist in using the imperial system will adopt the recommendation given in the preface that they should cease to employ these symbols in any case. The reasons for these recommendations are sound enough ("the symbol ʒj is often used to represent 60 grains and also to represent the fluid drachm, and the symbol ℥j to represent 480 grains, sometimes 437·5 grains, and also to represent the fluid ounce"), but the use of these symbols has been so long interwoven into the art of prescription writing that it is probable that custom will prevail.

Drugs and Preparations Omitted or Added.

Of the 168 drugs and preparations that have been discarded from the Pharmacopœia and Addendum the majority are rarely prescribed, if not almost obsolete. There are a few, however, which are still in frequent use, but the reasons for leaving them out of the official book of medicines are no doubt well founded. Among the better known drugs that have disappeared from the Pharmacopœia the most noticeable is perhaps sarsaparilla; but this root has long been considered to be useless. Gamboge is admittedly too drastic and uncertain; cantharides has been left out, but replaced by its active principle; mustard, figs, hops, and prunes are commercial products needing no definition; jaborandi is left out, but its active principle remains, and the same applies to pomegranate root bark and coca leaves; dandelion extract is commonly regarded as useless, while musk, although largely used for other purposes, is now seldom prescribed as a medicine. Most of the omissions are, in fact, capable of some simple explanation, but it is not easy to suggest reasons for the discarding of several of the drugs in the long list of deletions—for instance, elder flower water, which is commonly prescribed in eye lotions. The fewness of the additions, however, is more surprising than the length of the list of exclusions. Only 43 drugs and preparations have been introduced, which is about half the number added in 1898. Never in any corresponding length of time in the whole history of medicine have so many new drugs come into use as during the period that has elapsed since the last Pharmacopœia was published. There has been a constant flood of new remedies; hundreds, if not thousands, of them have enjoyed at least a passing vogue, and yet the new Pharmacopœia contains less than a dozen of them, for only a small proportion of the additions come within the category of new remedies. The best known of the substances that have justified their claim for a place are adrenalin, acetylsalicylic acid, diethyl-barbituric acid, chloral formamide, diamorphine hydrochloride, ethyl chloride, hexamethylene-tetramine, methylsalicylate, methylsulphonal, phenolphthalein, benzamine lactate, resorcin, senna pods, and strontium bromide. The desirability of fixing official standards for these commonly prescribed drugs is obvious. The short name adopted for diethyl-barbituric acid (which was first introduced into medicine under the proprietary title of veronal) is barbitone—a good name and one easily remembered; for acetylsalicylic acid no short synonym is given, but the name hexamina for hexamethylene-tretramine will be found useful by prescribers. Diamorphine chloride is more familiar under the short trade-mark name of heroin, while benzamine lactate is more familiar as β eucaine, and methylsulphonal as trional.

Alterations in Strengths of Preparations, &c.

Of equal importance to the lists of omissions and additions are the alterations that have been made in the strengths of some 40 of the official preparations. In many instances these changes have been necessitated by the decision of the General Medical Council to adopt most of the recommendations of the International Conference on the Unification of the Formulæ of Potent Drugs and Preparations. It is essential that medical practitioners should carefully examine the changes in the strength of such galenical preparations as the tinctures of aconite, belladonna, colchicum, digitalis, nux vomica, opium, and strophanthus. In prescribing these tinctures it must be borne in mind that the difference between the potency of the preparations of the Pharmacopœia of 1914 and that of 1898 are considerable. Thus, the new tincture of strophanthus is four times the strength of the old; the new tincture of opium is 33 per cent. stronger than the old; while the new tincture of nux vomica is half the strength of the old; and in the strengths of all the potent tinctures there are changes of at least minor importance. The modifications in the names of some 38 substances do not constitute a very important feature of the new work, while the alterations in the directions for the preparation of some 50 compounds interest the manufacturing chemist rather than the medical practitioner or the pharmacist. The fixing of limits to the proportion of lead and arsenic permissibly present as impurities in some 90 pharmaceutical substances is a step that has long been advocated by chemists, and it is satisfactory to note that this step has been taken.

The number of crude drugs and of their galenical preparations which are required to contain a definite proportion of the chief active constituent or constituents has been increased. Thus, belladonna leaves are required to contain not less than 0·3 per cent. of alkaloids; nux vomica is adjusted to contain 1·25 per cent. of strychnine, as that alkaloid is practically the only toxic alkaloid present, brucine being much less important from the medicinal point of view; aconite root must contain not less than 0·4 per cent. of ether soluble alkaloids; and most of the potent drugs and preparations are standardised where possible. With the object apparently of encouraging uniformity in the writing of prescriptions abbreviations of Latin titles of drugs and preparations have been adopted in the Index. It is true that some of the abbreviated names—such, for instance, as acac. cort. (for acaciæ cortex), acid. bor. (for acidum boricum), scill. (for scilla), and trag. (for tragacantha)—are not elegant, but if the list is found useful to prescribers and dispensers it will serve its purpose. The monographs on the volatile oils and fixed oils bear evidence of very thorough revision.

The new Pharmacopœia is remarkable for the changes that have been made with the object of rendering it more precise, and a careful examination of the volume yields convincing evidence that an immense amount of work has been accomplished by the committee of reference in pharmacy, whose valuable help has been acknowledged in the preface.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Staff-Surgeon: E. C. Sawdy to the *Vivid*, additional, for disposal. Surgeons: R. A. Brown to the *Audacious*, temporarily; and R. M. Riggall to the *Pembroke*, for Royal Naval Barracks. Temporary Surgeons: F. Nunneley to the *Dreadnought;* and G. P. O'Donnell to the *Vivid*, additional, for Devonport Dockyard.

Surgeon Probationers for temporary service: S. R. Prall, J. A. D. Skinner, A. F. G. Guinness, J. M. Harrison, E. D. Brooter, R. N. Craig, M. H. K. Kane, A. G. Lennon-Browne, E. A. Holmes, S. E. Y. Elliott, H. G. Stormer, W. B. Heywood-Waddington, G. F. Cobb, L. S. Fry, F. G. Tweedie-Lewtas, R. H. Clarke, W. G. S. Neely, C. Y. Roberts, S. J. L. Lindeman, G. E. Heath, R. G. Morgan, and H. W. L. Molesworth.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon: J. K. Murphy promoted to Staff-Surgeon, with seniority of Sept. 25th.

Temporary commissions in the Royal Naval Volunteer Reserve have been issued as follows:—To be Surgeon: Arthur Craigie McVittie and William Andrew Mallam (dated Oct. 3rd).

The undermentioned has been appointed Surgeon: William James Aitken Quine (dated Oct. 4th).

ARMY MEDICAL SERVICE.

The undermentioned to be temporary Colonels:—Dated Sept. 16th: Lieutenant-Colonel George H. Makins, C.B., 2nd London (City of London) General Hospital, Royal Army Medical Corps, Territorial Force; and Lieutenant-Colonel Sir Anthony A. Bowlby, C.M.G., 1st London (City of London) General Hospital, Royal Army Medical Corps, Territorial Force.

ROYAL ARMY MEDICAL CORPS.

Supernumerary Captain Archer Irvine-Fortescue, from the seconded list, is restored to the establishment (dated Sept. 25th). Frederick F. Bond, St. John Ambulance Brigade, Bearer Companies, to be temporary Captain (dated Sept. 25th).

The undermentioned officers, Home Hospitals Reserve, to be temporary Captains:—Dated August 6th: A. M. Wood, A. G. Price, G. W. Simla Paterson, J. G. McColl, W. L. Lyall, A. T. Campbell, W. W. Fyfe, J. A. Gray, R. J. Johnston, and G. Melville. Dated August 8th: W. C. Stevenson. Dated August 12th: C. T. W. Hirsch. Dated August 14th: W. F. Croll. Dated August 25th: J. M. Young.

The undermentioned to be temporary Lieutenants:—Dated Sept. 26th: David Hamilton Hadden, John Aquila MacMahon, Douglas Wardleworth, Kenneth Chisolm Middlemiss, Charles Lovell Spackman, Robert William Lang Todd, Morton Peto, William Brown, Francis Wardlaw Milne, Charles Walter Gordon Bryan, and Allan Noel Minns. Dated Sept. 28th: Maurice Fitzmaurice-Kelly and James Leslie Ruthven Philip. Dated Sept. 30th: Frederick Bernardus Dreyer.

Special Reserve of Officers.

Royal Army Medical Corps.

The undermentioned Cadets and ex-Cadets of the Officers Training Corps to be Lieutenants (on probation):—Eric Catford, William Oliver Lodge, Cyril Jacobs, Gordon Alexander Hodgson, Samuel Drummond Greer McEntire, Gerald Graham Alderson, Pensam Thornton, Bryan Montague Tuke, Alfred Percy Smith, James Calvert Spence, and John Edwin Allan.

The undermentioned to be Lieutenants (on probation):—John Percy Litt, John Paulley, Richard Pitt Ballard, William Wood Shorten, Alexander Lawrence Robb, Robert Hay, John Cowan, Griffith Lewis Jones, William Hern Cornelius, Frank Sykes, Samuel Armstrong Lane, Leslie Herbert Worthy Williams, James Macallan, Kingsley Wassell Lewis, Charles Layton Balkwill, William Hopper Shephard, Herbert Smith, Robert Godfrey Martyn, Frederick Vivian Bevan-Brown, Cecil John Rogerson, Patrick Joseph Corcoran, William McCombie, Norman Cameron, John Revie Caldwell, Claude Joscelyn Delaberé May, William John Sivewright Ingram, Armando Dumas Child, Jeremiah John Magner, Hector Smith, John Alfred Ryle, and Kingsley Louis O'Sullivan.

Supplementary to Regular Units or Corps.—The undermentioned Cadets and ex-Cadets of the Officers Training Corps to be Lieutenants (on probation):—Arthur Joseph Beveridge, George Albert Clark, Carl Damien Newman, Norman Braithwaite, Charles Frederick Hacker, James Kenworthy Johnston Haworth, Laurence Heber Warneford Iredale, Frank Miller Rorie, Cedric Overton Shackleton, Gilbert Wolridge Rose, William Dinsdale Anderton, Roland Harris Graham, Charles Arthur Wilson Ramsay, George Marsden Roberts, James McKay, James York Moore, William Blacker Cathcart, Hugh Gregan Crawford, William Barry Postlethwaite, James Salmond Robinson, John Edward Foley, Robert Patrick Archibald Kirkland, William Leonard Eliot Reynolds, Grantly Dick Read, Arthur Frederick Isbell Patterson, and Gerald Patrick Kidd.

The undermentioned to be Lieutenants (on probation):—Thomas Copeland Storey, William Alexander MacLellan, George Henry Chavasse Mold, John Francis Hill, Gerald Conroy Dixon, Charles Frank Burton, John Newton McIntosh, Stuart Dewar Robertson, Richard Harold Hodges, Thomas Knowles Boney, George Frederick Clifton, Ernest Frederick Guy, Charles Harry Greville Penny, Thomas Whittle Martin, James Elliot Black, Edwin Cyril Widmerpoole Starling, John Stanley Cocks, Gerald Thomas Mullally, and Robert Cathcart Ozanne.

Territorial Force.

Royal Army Medical Corps.

1st Highland Field Ambulance: William Henry Eden Brand to be Lieutenant.

2nd Home Counties Field Ambulance: Captain William H. Flint to be Major.

3rd Northumberland Field Ambulance: Lieutenant George H. Watson, from Attached to Units other than Medical Units, to be Lieutenant.

Attached to Units other than Medical Units.—To be Captains: Lieutenant Dudley R. Harris and Lieutenant Frederick A. W. Drinkwater. To be Lieutenants: Charles Butler, William Leslie Burgess, and Frank Winter Lawson.

Journal of the Royal Army Medical Corps.

Among the contents of this journal for September is an article on the Bacteriological Examination of Waters in the Field, by Major P. S. Lelean, which will be read with particular interest at a time when a practical knowledge of the subject is so important. Major Lelean records the results which he obtained during a recent reconnaissance of the water sources in a manœuvre area when he visited 93 towns and villages and obtained data with regard to 289 samples of water. He clearly describes the equipment necessary for the work and the routine which he followed, and lays stress on the assistance which medical officers in charge of sanitary districts on the lines of communication would have by a knowledge of the normal bacterial content of the water-supplies of the camps. Major J. B. Anderson supplies some interesting notes on trooping season 1914–1915, and in the clinical department of the journal there is a description of a bacillus very closely related to B. typhosus which was isolated from a blood culture. The section of this journal devoted to travel is always interesting, and this month's "Glimpses in the Netherlands, 1913," by Colonel J. M. Beamish, with its brief descriptions of Bruges, Ghent, Amsterdam, Rotterdam, and The Hague, especially appeals to us at the present moment. God's Acre in North-West India, by Colonel R. H. Firth, is the first instalment of a record of the names, the careers, and details as to the graves of, or monuments to, all the medical officers buried or memorialised in the Punjab, the North-West Frontier Provinces, and Kashmir.

West African Medical Staff.

The deaths are announced of Dr. T. P. Fraser (killed in action) and Dr. J. A. Harley.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 9246 births and 5441 deaths were registered during the week ended Saturday, Sept. 26th. The annual rate of mortality in these towns, which had been 14·4, 15·2, and 15·1 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year, rose to 15·7 per 1000 in the week under notice. During the 12 weeks of the quarter the mean annual death-rate in these towns averaged 13·1, against 13·2 per 1000 in London. Among the several towns the death-rate in the week under notice ranged from 6·2 in Southend-on-Sea, 6·6 in Eastbourne, 6·7 in Bournemouth, 7·9 in Swindon, and 8·1 in Ealing, to 22·7 in Middlesbrough, 22·9 in South Shields, 23·2 in Liverpool, 23·8 in St. Helens, 31·0 in Gateshead, and 34·8 in Wigan.

The 5441 deaths from all causes were 182 above the number in the previous week, and included 1189 which were referred to the principal epidemic diseases, against numbers steadily increasing from 394 to 1437 in the 11 preceding weeks. Of these 1189 deaths, 1004 resulted from infantile diarrhœal diseases, 56 from diphtheria, 50 from measles, 40 from whooping-cough, 23 from scarlet fever, 16 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 3·4, against 4·0 and 4·1 per 1000 in the two preceding weeks. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily increased from 112 to 1223 in the 11 preceding weeks, fell to 1004 in the week under notice, of which 245 were registered in London, 106 in Liverpool, 47 in Birmingham, 46 in Manchester, 32 in Stoke-on-Trent, 29 in Newcastle-on-Tyne, and 21 in Sheffield and in Sunderland. The deaths referred to diphtheria, which had increased from 31 to 53 in the six preceding weeks, further rose to 56 in the week under notice, and included 18 in London, 4 in Leeds, and 2 each in Plymouth, Devonport, Birmingham, Liverpool, and Cardiff. The fatal cases of measles, which had declined from 111 to 64 in the six preceding weeks, further fell to 50; 24 deaths occurred in London, 5 in Oldham, and 3 in Liverpool. The deaths attributed to whooping-cough, which had been 69, 51, and 50 in the three preceding weeks, further declined to 40, and included 13 in London, 3 in Liverpool, and 3 in Leeds. The deaths referred to scarlet fever, which had been 25, 39, and 27 in the three preceding weeks, further fell to 23, of which 7 were recorded in Manchester, 5 in London, and 2 in Salford. The fatal cases of enteric fever, which had been 17, 16, and 20 in the three preceding weeks, fell to 16, and included 2 in Hull.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased from 3071 to 3669 in the five preceding weeks, had further increased to 3964 on Sept. 26th; 674 new cases were admitted during the week, against 548, 619, and 551 in the three preceding weeks. These hospitals also contained on the 26th 1259 cases of diphtheria, 55 of enteric fever, 32 of whooping-cough, and 18 of measles, but not one of small-pox. The 1343 deaths from all causes in London were 5 fewer than the number in the previous week, and corresponded to an annual death-rate of 15·5 per 1000. The deaths referred to diseases of the respiratory system, which had been 128, 132, and 110 in the three preceding weeks, rose to 140 in the week under notice, and were 15 in excess of the number in the corresponding week of last year.

Of the 5441 deaths from all causes in the 97 towns, 173 resulted from various forms of violence, and 357 were the subject of coroners' inquests, while 1547 occurred in public institutions. The causes of 44, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Bristol, West Ham, Bradford, Hull, Portsmouth, and in 70 other smaller towns. Of the 44 uncertified causes of death, 9 were registered in Liverpool, 6 in Birmingham, 4 in Gateshead, 3 in London, 3 in Newcastle-on-Tyne, and 2 each in West Bromwich, St. Helens, and South Shields.

In the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8659 births and 4966 deaths were registered during the week ended Saturday, Oct. 3rd. The annual rate of mortality in these towns, which had been 15·2, 15·1, and 15·7 per 1000 of their aggregate population estimated at 18,120,059 persons at the middle of this year, declined to 14·3 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·2, against 13·3 per 1000 in London during the same period. Among the several towns the death-rate last week ranged from 3·0 in Dudley, 5·6 in Gillingham, 7·2 in Cambridge, 7·7 in Oxford, and 8·2 in Hornsey, to 21·2 in Tynemouth, 21·6 in Warrington, 21·8 in Great Yarmouth and in Wakefield, 22·0 in Stockton-on-Tees, and 22·3 in Birkenhead.

The 4966 deaths from all causes were 475 fewer than the number in the previous week, and included 877 which were referred to the principal epidemic diseases, against 1437 and 1189 in the two preceding weeks. Of these 877 deaths, 651 resulted from infantile diarrhœal diseases, 63 from diphtheria, 61 from measles, 50 from whooping-cough, 29 from scarlet fever, and 23 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·5, against 3·4 per 1000 in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 1172, 1223, and 1004 in the three preceding weeks, further declined to 651 last week, of which 183 were registered in London, 60 in Liverpool, 30 in Manchester, 26 in Stoke-on-Trent, 19 in Birmingham, 17 in Hull, 15 in Sheffield, and 12 each in Newcastle-on-Tyne and St. Helens. The deaths referred to diphtheria, which had steadily increased from 31 to 56 in the seven preceding weeks, further rose to 63 last week, and included 19 in London, 6 in Stoke-on-Trent, 4 each in Birmingham and Middlesbrough, 3 in Leyton, and 2 each in West Ham, Portsmouth, Blackburn, and Leeds. The fatal cases of measles, which had declined from 111 to 50 in the seven preceding weeks, rose to 61 last week; 19 deaths were recorded in London, 5 each in Birmingham and Birkenhead, 4 in Leeds, and 3 in Liverpool. The deaths attributed to whooping-cough, which had fallen from 69 to 40 in the four preceding weeks, rose to 50 last week, and included 12 in London, 5 in Newcastle-on-Tyne, and 4 each in Nottingham and Liverpool. The deaths referred to scarlet fever, which had been 39, 27, and 23 in the three preceding weeks, rose to 29 last week; 5 deaths were recorded in London, 5 in Birmingham, 4 in Manchester, and 2 each in Tottenham, Smethwick, Preston, and Sheffield. The fatal cases of enteric fever, which had been 16, 20, and 16 in the three preceding weeks, rose to 23 last week, of which 4 each occurred in London and Hull, and 3 in South Shields.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased from 3071 to 3964 in the six preceding weeks, had further risen to 4196 on Saturday last; 640 new cases were admitted during the week, against 619, 551, and 674 in the three preceding weeks. These hospitals also contained on Saturday last 1307 cases of diphtheria, 61 of enteric fever, 34 of whooping-cough, and 26 of measles, but not one of small-pox. The 1291 deaths from all causes in London were 52 fewer than the number in the previous week, and corresponded to an annual death-rate of 14·9 per 1000. The deaths referred to diseases of the respiratory system, which had been 132, 110, and 140 in the three preceding weeks, rose to 157 in the week under notice, and were 23 in excess of the number in the corresponding week of last year.

Of the 4966 deaths from all causes in the 97 towns, 163 resulted from various forms of violence, and 330 were the subject of coroners' inquests, while 1498 occurred in public institutions. The causes of 36, or 0·7 per cent., of the total deaths, were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Portsmouth, and in 70 other smaller towns. Of the 36 uncertified causes of death, 4 each were registered in Birmingham and Liverpool, 3 each in Rochdale and Gateshead, and 2 each in Nottingham, Bootle, St. Helens, and Sheffield.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1157 births and 699 deaths were registered during the week ended Saturday, Sept. 19th. The annual rate of mortality in these towns, which had increased from 13·8 to 16·5 per 1000 in the five preceding weeks, declined to 15·9 per 1000 in the week under notice. During the first eleven weeks of the quarter the mean annual death-rate in these towns averaged 14·2, against 12·9 per 1000 in the 97 large English towns. Among the several towns the death-rate during the week ranged from 7·6 in Motherwell, 9·4 in Ayr, and 10·2 in Kirkcaldy, to 18·4 in Perth, 21·8 in Coatbridge, and 23·0 in Hamilton.

The 699 deaths from all causes were 28 fewer than the number in the previous week, and included 119 which were referred to the principal epidemic diseases, against numbers steadily increasing from 49 to 137 in the seven preceding weeks. Of these 119 deaths, 96 resulted from infantile diarrhœal diseases, 8 from whooping-cough, 6 from scarlet fever, 4 from diphtheria, 3 from enteric fever, and 2 from measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·7, against 4·1 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily increased from 29 to 101 in the six preceding weeks, declined to 96, of which 54 were registered in Glasgow, 11 in Dundee, 10 in Edinburgh, 4 in Greenock, 4 in Hamilton, 3 in Coatbridge, and 3 in Kilmarnock. The deaths referred to whooping-cough, which had been 15, 16, and 16 in the three preceding weeks, fell to 8, and included 6 in Glasgow. The fatal cases of scarlet fever, which had been 8, 4, and 12 in the three preceding weeks, fell to 6, of which 4 occurred in Glasgow. The 4 deaths attributed to diphtheria were slightly below the average in the earlier weeks of the quarter, and comprised 2 each in Edinburgh and Aberdeen. The 3 deaths from enteric fever were equal to the average in the earlier weeks, and comprised 2 in Glasgow and 1 in Greenock. The 2 fatal cases of measles were registered in Glasgow,

The deaths referred to diseases of the respiratory system, which had been 70, 65, and 73 in the three preceding weeks, declined to 62 in the week under notice; 33 deaths were attributed to different forms of violence, against 30 and 23 in the two preceding weeks.

In the 16 largest Scotch towns 1124 births and 717 deaths were registered during the week ended Saturday, Sept. 26th. The annual rate of mortality in these towns, which had been 16·0, 16·5, and 15·9 per 1000 in the three preceding weeks, rose to 16·3 per 1000 in the week under notice. During the 12 weeks of the quarter the mean annual death-rate in these towns averaged 14·4, against 13·1 per 1000 in the large English towns. Among the several towns the death-rate in the week under notice ranged from 7·3 in Kilmarnock, 12·5 in Falkirk, and 12·6 in Motherwell and in Ayr, to 7·4 in Greenock, 17·7 in Glasgow, and 19·4 in Paisley.

The 717 deaths from all causes were 18 in excess of the number in the previous week, and included 128 which were referred to the principal epidemic diseases, against 137 and 119 in the two preceding weeks. Of these 128 deaths, 87 resulted from infantile diarrhœal diseases, 13 from whooping-cough, 12 from scarlet fever, 9 from diphtheria, 4 from enteric fever, and 3 from measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·9, against 3·4 per 1000 in the large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 89, 101, and 96 in the three preceding weeks, further fell to 87 in the week under notice, of which 54 were registered in Glasgow, 9 in Edinburgh, 8 in Dundee, 5 in Greenock, and 3 in Motherwell. The deaths referred to whooping-cough, which had been 16, 16, and 8 in the three preceding weeks, rose to 13, and included 11 in Glasgow. The fatal cases of scarlet fever, which had been 4, 12, and 6 in the three preceding weeks, rose to 12, and included 5 in Glasgow, 3 in Aberdeen, and 2 in Edinburgh. The deaths attributed to diphtheria, which had been 8, 6, and 4 in the three preceding weeks, rose to 9, of which 5 were recorded in Aberdeen and 2 in Glasgow. The 4 deaths referred to enteric fever were slightly in excess of the average in the earlier weeks of the quarter, and comprised 2 in Glasgow, and 1 each in Aberdeen and Kilmarnock. The fatal cases of measles were recorded in Glasgow, Dundee, and Greenock.

The deaths referred to diseases of the respiratory system, which had been 65, 73, and 62 in the three preceding weeks, slightly rose to 64 in the week under notice; 20 deaths resulted from various forms of violence, against 23 and 33 in the two preceding weeks.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1110 births and 687 deaths were registered during the week ended Saturday, Oct. 3rd. The annual rate of mortality in these towns, which had been 16·5, 15·9, and 16·3 per 1000 in the three preceding weeks, declined to 15·6 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 14·4, against 13·2 per 1000 in the 97 large English towns. Among the several towns the death-rate during the week ranged from 10·8 in Hamilton, 13·8 in Edinburgh and in Perth, and 14·0 in Kirkcaldy, to 18·1 in Greenock, 18·2 in Coatbridge, and 19·8 in Dundee.

The 687 deaths from all causes were 30 fewer than the number in the previous week, and included 92 which were referred to the principal epidemic diseases, against 119 and 128 in the two preceding weeks. Of these 92 deaths, 52 resulted from infantile diarrhœal diseases, 13 from whooping-cough, 12 from scarlet fever, 9 from diphtheria, 4 from enteric fever, and 2 from measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·1, against 2·5 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 101, 96, and 87 in the three preceding weeks, further fell to 52 last week, of which 28 were registered in Glasgow, 9 in Edinburgh, 5 in Dundee, and 2 in Greenock. The deaths referred to whooping-cough, which had been 16, 8, and 13 in the three preceding weeks, were again 13 last week, and included 11 in Glasgow. The fatal cases of scarlet fever, which had been 12, 6, and 12 in the three preceding weeks, were again 12 last week; 3 deaths occurred in Glasgow, 3 in Aberdeen, and 2 in Dundee. The deaths attributed to diphtheria, which had been 6, 4, and 9 in the three preceding weeks, were again 9 last week, and included 4 in Aberdeen and 2 in Glasgow. The 4 deaths referred to enteric fever, of which 2 were recorded in Glasgow, were slightly in excess of the average in the earlier weeks of the quarter. The fatal cases of measles occurred in Glasgow and Aberdeen.

The deaths referred to diseases of the respiratory system, which had been 73, 62, and 64 in the three preceding weeks, rose to 71 in the week under notice; 27 deaths resulted from various forms of violence, against 33 and 20 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 598 births and 443 deaths were registered during the week ended Saturday, Sept. 26th. The annual rate of mortality in these towns, which had been 18·1, 17·0, and 19·9 per 1000 in the three preceding weeks, fell to 19·2 per 1000 in the week under notice. During the 12 weeks of the quarter the mean annual death-rate in these towns averaged 16·8, against corresponding rates of 13·1 and 14·4 per 1000 in the English and Scotch towns respectively. The annual death-rate in the week under notice was equal to 18·4 in Dublin (against 15·5 in London and 17·7 in Glasgow), 22·1 in Belfast, 22·4 in Cork, 22·8 in Londonderry, 23·0 in Limerick, and 17·1 in Waterford, while in the 21 smaller towns the mean death-rate was 21·7 per 1000.

The 443 deaths from all causes were 16 fewer than the number in the previous week, and included 92 which were referred to the principal epidemic diseases, against 89 and 97 in the two preceding weeks. Of these 92 deaths, 71 resulted from infantile diarrhœal diseases, 9 from whooping-cough, 5 from measles, 3 from diphtheria, and 2 each from enteric fever and scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 4·0, against corresponding rates of 3·4 and 2·9 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 74, 71, and 74 in the three preceding weeks, fell to 71 in the week under notice and included 44 in Belfast, 13 in Dublin, 4 each in Cork and Londonderry, and 3 in Newtownards. The deaths referred to whooping-cough, which had been 3, 7, and 4 in the three preceding weeks, rose to 9, and included 4 in Belfast and 3 in Cork. The 5 fatal cases of measles, of which 4 occurred in Belfast, were 3 below the average in the earlier weeks of the quarter. Of the 3 deaths attributed to diphtheria, 2 were recorded in Dublin and 1 in Tralee; the 2 fatal cases of scarlet fever occurred in Belfast, and those of enteric fever in Dublin and Belfast.

The deaths referred to diseases of the respiratory system, which had been 49, 35, and 50 in the three preceding weeks, rose to 56 in the week under notice. Of the 443 deaths from all causes, 123, or 28 per cent., occurred in public institutions, and 10 resulted from different forms of violence. The causes of 16, or 3·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 English towns the proportion of uncertified causes in the week under notice did not exceed 0·8 per cent.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 676 births and 401 deaths were registered during the week ended Saturday, Oct. 3rd. The annual rate of mortality in these towns, which had been 17·0, 19·9, and 19·2 per 1000 in the three preceding weeks, further fell to 17·3 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 16·9, against corresponding rates of 13·2 and 14·4 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 19·1 in Dublin (against 14·9 in London and 15·5 in Glasgow), 17·4 in Belfast, 14·3 in Cork, 14·0 in Londonderry, 16·2 in Limerick, and 17·1 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 13·5 per 1000.

The 401 deaths from all causes were 42 fewer than the number in the previous week, and included 53 which were referred to the principal epidemic diseases, against 97 and 92 in the two preceding weeks. Of these 53 deaths, 41 resulted from infantile diarrhœal diseases, 6 from whooping-cough, 2 from diphtheria, 2 from scarlet fever, and 2 from enteric fever, but not one from small-pox or from measles. The mean annual death-rate from these diseases was equal to 2·3, against 2·5 and 2·1 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 71, 74, and 71 in the three preceding weeks, further declined to 41 last week, and included 21 in Belfast, 11 in Dublin and 4 in Cork. The deaths referred to whooping-cough, which had been 7, 4, and 9 in the three preceding weeks, fell to 6 last week, of which 4 occurred in Belfast. The deaths from diphtheria were registered in Dublin and Bangor, those from scarlet fever in Belfast and Limerick, and those from enteric fever in Dublin and Belfast; the number was in each case slightly below the average in the earlier weeks of the quarter.

The deaths referred to diseases of the respiratory system, which had been 35, 50, and 56 in the three preceding weeks, further rose to 58 in the week under notice. Of the 401 deaths from all causes, 127, or 32 per cent., occurred in public institutions, and 7 resulted from different forms of violence. The causes of 21, or 5·2 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 English towns the proportion of uncertified causes last week did not exceed 0·7 per cent.

WAR AND THE DANGER FROM CHOLERA AND PLAGUE IN THE NEAR EAST.

(BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

FIVE of the great Powers of Europe (England, France, Russia, Germany, and Austria), one great Power in the Far East (Japan), and three of the smaller European Powers (Belgium, Serbia, and Montenegro) are now involved in war—a war that is already not only the most colossal but also the most deadly that the world has ever seen. Deadly, not only on account of the enormous death-dealing powers that science has put into the hands of modern armies, but also on account of the angry passions aroused—passions that have been embittered a thousandfold by the atrocities committed against humanity and civilisation by one of the principal combatants. And to these death-dealing forces disease will most assuredly be added sooner or later. The experience of the next few months will show how far modern military medicine and hygiene have succeeded in keeping under enteric fever, dysentery, diarrhœa, and the many other disorders that have ravaged armies in almost all former wars. That these diseases will prevail to some extent is inevitable. Should cholera or plague be added to them the results will be still more disastrous.

In my last letter (published in THE LANCET of August 1st, p. 337) I showed that cholera had already made its reappearance in Russia, and now a more serious extension of the disease there has to be reported. In Turkey cholera was admittedly present, in and near Adrianople and elsewhere, as late as May last, and there is reason to believe that cases of the disease have recently occurred in and near Constantinople without being reported by the authorities. In Austria and in Roumania cholera was prevalent to a considerable extent in 1913; it only disappeared from those countries towards the end of the year, and a fresh revival of the disease there is far from impossible. But while the risk of a serious extension of cholera in Europe owing to the war cannot be excluded, that risk may be regarded as very greatly diminished by the fact, upon which I have dwelt before, that the present cholera virus in Europe is one which appears to have lost to a great extent its primitive force and virulence, owing, no doubt, to the long period that has elapsed since it was introduced into Europe from the endemic home of cholera in India.

Plague is a disease that offers far less menace to fighting forces than does cholera. Even the pneumonic form of the disease is scarcely likely to sweep over an army in the field; but the possibility of the infection, both in its bubonic and its pneumonic form, being diffused widely as a result of the war, and especially of its attacking refugees herded together under insanitary conditions, cannot be wholly lost sight of. I have added, therefore, to the following brief summary of recent cholera prevalence in the Near East a survey of the various outbreaks of plague that have been recorded in the same part of the world during the past few months.

Cholera in Russia.

As stated in my last letter on this subject, a fatal case of cholera was seen at Kherson on July 9th; no further cases of the disease have been reported from here. But in the government of Podolia there has been a more extensive outbreak. It began on July 2nd (15th), and the districts of Yampol and Vinnitza seem to have been the most seriously affected. According to a bulletin issued in the *Official Messenger* of July 25th (August 8th), there had occurred up to that date in the Podolia government 303 cases of cholera with 115 deaths. Of these, 241 cases and 84 deaths had been registered in the Vinnitza district; 52 cases and 28 deaths in the Yampol district; 8 cases and 3 deaths in the Litinsk district; and 2 cases in that of Bratslav. A later bulletin, dated August 19th (Sept. 1st), states that only isolated and sporadic cases of cholera had been seen in the interval, and that cholera had completely disappeared from most of the infected places formerly mentioned. On the other hand, some cases of cholera had been seen in the Ouman district of the Kief government, but no fresh case had been reported for five days. It had been rumoured that cholera was present in Batoum and other Russian ports of the Black Sea, but this was officially denied by the Russian Government on Sept. 5th.

Rumoured Cholera in Turkey and the Mobilisation.

After the Great Powers declared war (or began it without a declaration) Turkey lost no time in mobilising practically the whole of her army. The mobilisation has been on a larger scale, more thorough, more virulent, if the expression may be permitted, than even that of two years ago, when this country was truly at war. No one has been spared; requisitions have been carried out ruthlessly, with little regard for the law on the subject, whether local or international. Some half million or more of men are now in barrack and camp on a war footing, mostly in Adrianople and in other places on the European side of the Bosphorus and Dardanelles. If but one half of the stories be true that are widely repeated respecting the lack of food, proper clothing, and other necessaries from which these troops suffer, the condition of the latter must be lamentable indeed. No doubt most of these stories are exaggerated, but it is certain that the men are for the most part very badly found in food and other necessaries, and should cholera appear among them it might well cause a serious epidemic. For some time past it has been persistently rumoured that cases of the disease have occurred, first at Eski-shehir, in Asia Minor, then at Tchamlidja, one of the hills near the capital overlooking the Bosphorus, and now in Constantinople itself. Officially, nothing is published as to the truth or untruth of these rumours, but when inquiries are made the reply is carefully worded to the effect that no cases of cholera have occurred "among the civil population."

Cholera (?) in Serbia.

A telegram to the press from Salonica, dated Sept. 13th stated that cholera was prevalent at Nisch, where "many cases have already been observed." This is, however, denied by a press agency telegram from Nisch itself, dated Sept. 19th, which states that not a single case of cholera has been seen there.

Plague in Beirût and the Lebanon.

A few sporadic cases of plague have been observed in or near Beirût since as long ago as October, 1913. On the 27th of that month the first recorded case was seen in a village called Keferchina, situated in the Lebanon, at a distance of two hours from the town of Beirût. The patient was a dock labourer, but no evidence has been furnished as to the source of the infection. A month later, on Nov. 26th, another case was reported, occurring in Beirût itself; the patient was a factory hand. On Dec. 8th a soldier in the Beirût garrison fell ill with the disease, and a second case among the troops occurred on the 13th. The diagnosis in all the cases in the town itself was confirmed bacteriologically. No further case was heard of until May 16th, 1914, when a pupil at the English boys' school was found to be suffering from plague; the boy died on the 17th. On June 16th yet another case was seen; the patient was a man aged 45, a merchant living in the centre of the town; in this, as also in the preceding case, there was bacteriological proof that the disease was plague. On July 6th a mild case was reported, occurring in the south-east quarter of the town; and this was followed by other cases on July 25th, on August 2nd, and on August 23rd.

Plague in Jaffa and Caiffa.

On May 30th a negro "hamal," or porter, a resident in Jaffa, was found to be suffering from plague, and on the same day the body of another negro was discovered, presenting the external appearances of having died from plague. There followed two more cases on June 4th, one on the 8th, one on the 9th, and one on the 26th, since when Jaffa appears to have been free from the disease. It is remarkable that all these seven cases occurred in negroes and all apparently in the same quarter of the town. The source of the infection was not traced. In most, if not all, of the cases there was bacteriological proof of the nature of the disease. On August 29th a suspected case of plague was reported from Caiffa, but its exact nature was never confirmed.

Plague in Tripoli (Syria).

Only a single case has been reported from Tripoli; it was first seen on June 14th, but the patient, a grocer, was then said to have been ill for seven days.

Plague and Cholera in Greece and in the Islands of the Ægean.

The uncertain political status of many islands of the Ægean has led, among other results, to considerable difficulty in obtaining definite information as to their sanitary state, in respect of the presence or absence of epidemic diseases. Rhodes and the islands of the Dodecanese are in Italian occupation; Chios, Mitylene, and others are in Greek occupation, and few remain definitely in Turkish possession. Rumours of the existence of plague in Chios began to be heard as long ago as May. It seems to have been a fact that four cases of the disease did occur then; but how many more (if any) followed has remained uncertain. Early in August plague was again stated—on no very certain authority—to be present in Chios and in Samos, but no figures were made known, and it was not wholly unsuspected that the report of the existence of the disease in those islands was made with a political rather than with a purely sanitary object. On August 30th the Turkish Legation in Athens telegraphed to the effect that 12 persons arriving at the Piræus from Chios and Mitylene had been found to be suffering from plague and had been isolated at the village of Daphne, near to the Piræus. The telegram added that many cases of the disease were still occurring in Chios and Mitylene; but there has been no confirmation of this from other sources. On Sept. 3rd the Turkish Vice-Consul in the island of Syra (in the Cyclades) reported that a case of plague had occurred there on the 2nd, and that the patient had died on the 3rd. Finally, on Sept. 12th the Turkish Consul-General at Salonika reported that seven cases of plague had been observed there, three of the patients being soldiers and the other four immigrants. No intimation of this outbreak has, however, yet been received from the Greek authorities. On August 5th the Turkish Consul-General at Janina reported that a suspected and fatal case of cholera had occurred there. No subsequent information has been received respecting this case.

Plague in Smyrna.

The first known case of plague in Smyrna seems to have been that of a police official charged with the supervision of dock labourers; he died on the night of July 15th–16th, after three days' illness. On Sept. 2nd another case was reported. The patient, a woman, had been ill since August 22nd, and there was some doubt as to the real nature of the case. Two more cases were reported on Sept. 7th, and the same day it was announced that a grain merchant, who had died on the 5th with uræmic symptoms, had died from plague.

Plague in Adalia.

On July 31st a case of plague was seen in Adalia, on the south coast of Asia Minor, where, it will be recalled, sporadic cases of the disease have occurred almost every summer for many years past.

Plague in Jeddah.

The first case of plague in this year's revival of the disease in Jeddah was seen on Feb. 2nd. Between that date and March 11th some six cases in all were reported—a strikingly small number as compared with other recrudescences of the disease here in recent years.

Plague in Basra and on the Tigris.

On May 25th a case of plague was observed in Basra, the patient being a grocer. The following day three fresh cases were admitted to the American hospital (situated on the canal which joins the town of Basra to the great Shatt-ul-Arab river). These were followed by several other cases, and between the date named and July 17th 20 cases, with 12 deaths, were recorded. It may be added that one of these cases occurred on the premises of the principal

British navigation company in those waters, and that several dead rats were found on these same premises. On June 23rd the dead body of a passenger on one of the river boats that ply between Basra and Bagdad was landed at Kut-el-Amara, one of the principal places of call of these steamers, three days' voyage from Basra (on the upward journey). Fortunately there was no spread of the disease in Kut-el-Amara or elsewhere.

Plague in the Russian Steppes.

Since my last letter on this subject[1] the following have been the principal outbreaks of plague in the Kirghiz and Kalmuck steppes of Southern Russia. In the autumn of last year plague was present in four places in the Don Territory. At Novopetrovsk 35 cases with 34 deaths occurred between Oct. 7th and 28th; at a farm at Kalatch 5 cases with 4 deaths were seen between Oct. 11th and 28th; at Breslavsk also 5 cases with 4 deaths occurred between Oct. 16th and 29th; and at Gromoslavsk a few cases also occurred about the same time. On the other hand, an official notice of Nov. 9th stated that in all 58 cases of plague, all of the pulmonary variety and all fatal, had been registered in the Don Territory between Oct. 9th and Nov. 4th. Two medical assistants, named Kurilkin and Serpokarylof, died from the disease in this province. A severer outbreak occurred in the Uralsk province in November. Between the 2nd and 30th of that month 319 cases of the disease and 290 deaths were recorded, and at the last-named date 19 were still under treatment. This outbreak occurred mainly at Inder, in the district of Lbishtchensk, but there were also cases at Kalmykof, Kizildjar, and Djaksibaief. There was a revival of the disease at Inder in March of this year, when, between the 15th and 29th of the month, 16 cases of plague, all fatal and mostly of the pulmonary form, were recorded. In the Astrakhan government three cases of plague were seen at Aktubé at the end of December last. In the past summer several other centres became infected. Cases of the disease were seen at Boulanai, Manish-Tchagyl, Bektass-Tchagyl, and Tourgun, in the Kirghiz steppes of this government; at Arkhanskoé-Tebé, Kekshin, and Goubia, in the Kalmuck steppes; and in the village of Tsaref (all in the Astrakhan government). The total number of cases of plague here, between May 25th and July 16th, was 48, and 45 of these were fatal. (All the dates mentioned above are according to the New Style.) Between the last-named date and July 23rd no fresh cases were seen in this government. At Arkhanskoé-Tebé a member of the medical staff, Dr. Yefimof, caught the disease in its pulmonary form from a patient and died from it.

Constantinople, Sept. 19th.

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[1] THE LANCET, Nov. 29th, 1913.

A MEETING of the Society for the Study of Inebriety will take place next Tuesday, Oct. 13th, at 4 P.M., when a discussion on Drug Addiction in Relation to Mental Disorder will be opened by Dr. Robert Armstrong-Jones.

UNIVERSITY OF LONDON: UNIVERSITY COLLEGE.—The following Entrance Scholarships and Exhibitions have been awarded in the Faculty of Medical Sciences:—Bucknill Scholarship (135 guineas), B. Rosenstein, of Westminster City School. First Medical Exhibition (55 guineas), H. N. F. Cook, of University College, London. Second Medical Exhibition (55 guineas), A. W. Holgate, of Alleyn's School, Dulwich. Proxime accessit, M. Baranov, of King Edward VII. School, Johannesburg, and University College, London. Epsom Free Medical Scholarship, H. E. Beasley.

DONATIONS AND BEQUESTS.—The late Mr. John Railton, of Alderley Edge, Cheshire, has left £1000 to the Manchester Royal Infirmary, Dispensary, and Asylum; £500 to the Manchester Royal Eye Hospital; and £500 to the St. Mary's Hospitals, Manchester, which include St. Mary's Hospital and the Manchester and Salford Lying-in Hospital, the Manchester Southern Hospital for Women and Children, and the Manchester Maternity Hospital.—The Royal Berkshire Hospital will receive £300 under the will of the late Mrs. Elizabeth S. Neall.—Under the will of the late Dr. Aldis Wright, LL.D., the Beccles Hospital will receive £500. The testator also left £5000 and his books to Trinity College, Cambridge.

Obituary.

SIR HENRY DUNCAN LITTLEJOHN, M.D. EDIN., F.R.C.S. EDIN., LL.D. EDIN. (HON. CAUSÂ),

LATE PROFESSOR OF FORENSIC MEDICINE, EDINBURGH UNIVERSITY;
EX-PRESIDENT, ROYAL COLLEGE OF SURGEONS, EDINBURGH;
AND MEDICAL OFFICER OF HEALTH OF EDINBURGH.

Sir Henry Duncan Littlejohn died at his country residence, Benreoch, Arrochar, N.B., on Sept. 30th, at the age of 86. He had been in poor health for the preceding three years, and this, together with his ripe age, rendered his death, though deeply regretted by many friends, the community at large, and his profession in particular, hardly unexpected.

Henry Duncan Littlejohn, who was the son of Thomas Littlejohn, a well-to-do merchant and burgess of Edinburgh, was born in that city in 1828. He received his general education at Perth Academy, and subsequently at the Edinburgh High School, whence he entered the University of Edinburgh. He graduated there as M.D. in 1847, and in the same year became a Licentiate of the Royal College of Surgeons of Edinburgh at the extra-mural school of which he received part of his medical education. He was admitted to the Fellowship in 1854. He studied for a while at the Sorbonne, in Paris, and also at the Universities of Vienna and Berlin. In 1855 he was appointed lecturer on medical jurisprudence at the Royal College of Surgeons, which post he continued to hold for 42 years, until, in fact, on the death of Sir Douglas Maclagan, he succeeded him in the corresponding professorship at the University of Edinburgh, being then in his sixty-ninth year.

In September, 1862, Sir Henry Littlejohn was appointed medical officer of health of Edinburgh, and it was in this capacity that he first set out on the road to distinction. Edinburgh was about that time a hotbed of epidemic fever, and he prepared a monumental report on the sanitary condition of the city, which dealt in an illuminating manner with the overcrowding, the filthy condition of the closes and houses, especially in the old town, the condition of the byres and bakehouses, the drainage, the water-supply, and so forth. His observations bore fruit (being reinforced in 1866 by another outbreak of cholera) in the passing of the Edinburgh City Improvement Act of 1867. The Improvement Trust, which demolished many of the slum districts and replaced them by new streets at a cost of over half a million sterling, was the outcome of this excellent work. To detail the work of Sir Henry Littlejohn in the field of public health would be to recount the entire sanitary history of Edinburgh for a period of 46 years—viz., until his resignation of the office in 1908. Special mention, however, must be made of four points in connexion with this work. To him is due, first, the origination and completion of the Hospital for the Treatment of Epidemic Diseases; secondly, the development of notification of infectious diseases; thirdly, the establishment of a higher standard of physical comfort among the working classes; and lastly, and in consequence, a progressive fall in the death-rate of the city from an average around 34 per 1000 in the "sixties" to 14·3 per 1000, its present figure in the last annual report. Sir Henry Littlejohn's work in this capacity brought him into intimate relations with the Board of Supervisors, now the Local Government Board for Scotland, by which his assistance was constantly sought in dealing with outbreaks of infectious disease and for reporting on insanitary conditions throughout the country. These reports were largely published, and constitute a valuable record of the progress of sanitation in Scotland. He was appointed medical officer to the Board in 1873, under the Public Health Act, and when his connexion therewith was severed in 1908 the Board paid a high tribute to his "half a century's strenuous work" in public health.

Another public appointment, the duties of which Sir Henry Littlejohn discharged with his customary acumen and thoroughness, was that of surgeon to the Edinburgh police, which, with his eminence as a teacher of forensic medicine, quite naturally led to his services being frequently utilised as medical adviser to the Crown in criminal cases. He was engaged in all the chief criminal trials of the last 50 years in Scotland, notably those of Pritchard and the Ardlamont case, and in this connexion he got together an important collection of relics of criminal trials which he presented to the University on his appointment as professor of forensic medicine. He was called on to conduct the analysis in all poisoning cases, and in civil cases also he was a highly esteemed expert witness. He was also repeatedly called as an expert in public health questions before committees of the House of Lords and House of Commons.

His extraneous activities were no less vigorous than his professional ones, for he associated himself with a large number of charitable organisations, and especially with most of those in the city of Edinburgh. He was chairman of the Society for the Prevention of Cruelty to Children. He was one of the founders of the Royal Hospital for Sick Children, and remained in close connexion therewith as a director to the end of his life. He also served for nine years on the board of the Royal Infirmary. As a lecturer Sir Henry Littlejohn was at once facile and practical. His lectures were for the most part extempore, and he rarely took anything into the lecture-room except a few jottings or cuttings from a newspaper sufficient to form a text for his discourse. The experience he had gained in his capacity as police surgeon and in the witness box, and his frequent consultation by the Crown in important criminal cases, enabled him to present the usually rather dry subject of forensic medicine in a practical light, while his manner was light and breezy, never tedious.

In 1875 Sir Henry Littlejohn was President of the Royal College of Surgeons of Edinburgh, and from 1883–85 President of the Edinburgh Medico-Chirurgical Society. When the Royal Institute of Public Health held its annual meeting in Edinburgh in 1893 he was chosen president, and his University conferred upon him its honorary degree of LL.D. He was knighted in 1895. In 1907, on the occasion of his retirement from the professorship of forensic medicine at the University, he was publicly presented with his portrait from the brush of Sir George Reid, ex-President of the Royal Scottish Academy.

He married Isabella Jane, daughter of Mr. H. Harvey, of London, by whom he leaves several daughters and one son, Professor Harvey Littlejohn, who succeeded his father in the chair of forensic medicine at Edinburgh University. The body was cremated in Glasgow on Oct. 2nd, the remains being deposited in the Dean Cemetery, Edinburgh, for Sir Henry Littlejohn was a strong supporter of cremation and Vice-President of the Scottish Cremation Society.

EDWARD HOOPER MAY, M.D. ST. AND., F.R.C.S. ENG.,

CONSULTING SURGEON, PRINCE OF WALES'S GENERAL HOSPITAL, N.

BY the death of Dr. E. Hooper May on Sept. 23rd the medical profession of the north of London has lost one of its oldest and most prominent members. A man of singularly retiring disposition, he possessed that peculiar charm given by genuine courtesy that characterised what is called the "old school" of medicine. Essentially a surgeon at heart, he yet made an ideal general practitioner, and throughout his long life he was ever foremost in efforts to advance the welfare of his neighbourhood. Perhaps he will be best remembered for his work in connexion with the Prince of Wales's General Hospital, of which he was one of the founders in 1867, and on the surgical staff of which he served until advancing years caused his retirement from the acting staff. Nothing gave him greater gratification than the rapid advance of this hospital, and there is no doubt that it is to his energy and devotion that the present position of the hospital among the London hospitals is due.

Born in 1831 in the house at Tottenham in which he died, he was educated at a private school and at St. Bartholomew's Hospital, where he was dresser to Edward Stanley and clinical clerk to Sir George Burrows. After qualifying in 1854 he went for an extra year's study to Edinburgh to be under Syme. For Syme he had the greatest admiration, and only a few days before his death he told a friend that he still thought Syme was the greatest surgeon of modern times. He also worked with Lister in 1855 at Edinburgh Infirmary. He obtained the F.R.C.S. Eng. by examination in 1856, and settled in practice at Tottenham, where his father, who came of old Quaker stock, had been in practice before him. In 1860 he took the degree of M.D. St. Andrews. In 1864 he assisted in establishing a dispensary, now known as the Tottenham and Edmonton General Dispensary, and in 1867 he was one of the founders of a hospital in connexion with a community of Evangelical Protestant deaconesses. This became the Tottenham Hospital, and eventually the Prince of Wales's General Hospital. Excellently trained for the work, he introduced Listerian principles at Tottenham, and he used to say that the carbolic spray was used earlier at Tottenham than at any other hospital, and given up earlier too. At this time he maintained a close friendship with, among others, Paget and Jonathan Hutchinson, sen., and Hughlings Jackson was one of his most intimate friends. Dr. May did the first nephro-lithotomy in England, though it was not done as a planned operation.

Dr. May did not make many contributions to medical literature. His opinion was widely sought, not only in surgical cases, and he did much consulting work in the north of London. To the end he retained perfectly his eyesight and hearing, and his interest in affairs and his mental activity were unabated. He leaves a widow and family, but none of his sons is in the profession.

JOHN FLETCHER LITTLE, M.B. CANTAB., M.R.C.P. LOND., J.P.,

LATE PHYSICIAN TO THE LONDON TEMPERANCE HOSPITAL AND MOUNT VERNON HOSPITAL FOR CONSUMPTION, ETC.

Dr. Fletcher Little, who died recently, was born in County Tipperary in 1843. His early education, including the first part of his medical training, was obtained in Dublin. In 1866 he took the qualifications of L.R.C.S., L.R.C.P. Edin. Shortly afterwards he commenced practice at Woolton, near Liverpool, an experience which he frequently afterwards used to quote as having been of much value to him. After some years he established himself at Ben Rhydding. It was at this time that he became interested in physical methods of treatment, especially in massage, and was able to pay a visit to the United States of America to study the ideas which found development later in treatment of the "Weir Mitchell" type. He left Yorkshire in 1879 and began medical study at Cambridge and Charing Cross Hospital, obtaining the degree of M.B. in 1888, and the Membership of the Royal College of Physicians of London in 1889. He had already opened a school for the training of both men and women in massage, one of the earliest institutions for this purpose in London.

Dr. Little acquired a considerable practice, but his wide interests soon induced him to give a large amount of time to public duties. He served for a considerable period on the London County Council and on the Marylebone borough council. In both places he gave evidence of a wide and sympathetic outlook on public affairs, and his advice was of much assistance on many occasions when matters involving the public health and medical interests were concerned. In politics he was an enthusiastic Liberal, and contested Oxford City in the Liberal interest in the year 1895. He held various medical posts of importance in London; for some time his medical work centred in the London Temperance Hospital and at the Mount Vernon Hospital, in both of which institutions he held the appointment of physician. A post to which he gave a large amount of care and attention was the medical officership of health of Harrow. He held this position up to the time of his death, never losing interest in Harrow and its neighbourhood, and had the strength to prepare the annual report of his work to the Harrow council for the year 1913.

To medical men in London Dr. Little was well known on account of his early advocacy and unfailing interest in schemes for post-graduate instruction. He had personally appreciated the value of this in his own career, and felt sure of the desirability of making post-graduate study easily obtainable. He assisted in starting a post-graduate course at Charing Cross Hospital, which was for many years very successful, and was almost the only course of instruction at the time arranged for post-graduates in London. Later, in association with the late Sir Jonathan Hutchinson, he was instrumental in starting the London post-graduate scheme which ultimately developed into the Medical Graduates' College and Polyclinic, an institution which has done so much good work for the medical profession. He was a man gifted with a sanguine temperament, enthusiastic in all that he undertook; difficulties were never too great to be overcome. His cheerfulness never stood him in better stead than during the long and trying illness which preceded his death.

Dr. Little was a member of a family consisting of three sisters and five brothers; two of his brothers, William and Joseph, entered the medical profession and practised in Australia.

SIR ALFRED EDWARD THOMSON, M.D. R.U.I.

THE death has occurred of Sir Alfred Thomson, of Cape Town, in a nursing home in Belfast, on Sept. 27th. Some four years ago he was the subject of gastro-enterostomy and, symptoms recurring, a second operation became necessary. This was successfully performed, but the patient's general strength failed and he succumbed in a few days. Sir Alfred Thomson, who was a son of a medical man at Bangor, county Down, studied at Queen's College, Belfast, and in 1886 graduated M.D. of the Royal University of Ireland. In 1891 he became a Member of the Royal College of Surgeons of England. He subsequently went to South Africa and settled down in Cape Town, where he built up an excellent practice and became visiting surgeon to the New Somerset Hospital. He was about 50 years of age at the time of his death and unmarried. Sir Alfred Thomson received his knighthood this year.

GEORGE GRESWELL, M.A. OXON. & CAPE OF GOOD HOPE, L.R.C.P. & S. EDIN., L.F.P. & S. GLASG.

WE regret to announce the death of Dr. George Greswell, a well-known practitioner of Louth, which took place at his residence on Sept. 16th following a severe chill.

Dr. Greswell, one of a family of nine brothers and sisters, received his preliminary education at King Edward VI. Grammar School, Louth, and afterwards went to Oxford University, where he had a distinguished career, obtaining an open exhibition at Christ Church, and afterwards graduating B.A. with honours in 1880. His medical studies were pursued at Edinburgh University, at St. Thomas's Hospital, and at Westminster Hospital. At the last institution he won an open scholarship, and having qualified by taking the L.R.C.P. & S. Edin., L.F.P. & S. Glasg., in 1892, he held various appointments in the Medical School, including that of demonstrator of practical histology. Later he was appointed lecturer in physical science under the Government of the Cape of Good Hope, having previously acted for two years as lecturer at the Diocesan College of Rondebosch, near Cape Town. On returning to England he took up medical practice at Grimsby for a time, and for the past 12 years had been in practice at his native town of Louth, in partnership with his brother.

Dr. Greswell was a frequent contributor to medical journals, and wrote several books, among them being "An Examination of the Theory of Evolution" and a "Veterinary Pharmacopœia and Manual of Comparative Therapy." He was also the author of "Health, Morals, and Longevity," and in conjunction with his brother of "The Vital Balance" and the "Wonderland of Evolution." Dr. Greswell will be greatly missed by his many friends and by the inhabitants of Louth, where he was highly esteemed for his learning, skill, and kindly nature.

EXETER ISOLATION HOSPITAL.—On Sept. 30th the foundation-stone of the new administrative block for the Exeter Isolation Hospital was laid by the mayor in the presence of a large gathering. The estimated cost of the building is £2700.

Correspondence.

"Audi alteram partem."

EPIDEMIC DISEASE IN WAR TIME.

To the Editor of THE LANCET.

SIR,—Now that not only so many of the larger hospitals in England, but also many private mansions, hotels, &c., are being converted into hospitals for the wounded, it is important that in all abundant means of isolation of patients with epidemic diseases should be provided in connexion before the outbreak of these diseases. The two main diseases to be anticipated are typhoid and epidemic dysentery. Isolated cases of these diseases can be treated in general wards of well-managed hospitals; but when aggregated, and particularly so when the mass of other patients have been exposed to cold, wet, irregular and often insufficient food, and have further had serious injuries, these diseases soon become epidemic.

Early isolation of all cases of these diseases, and also of carriers of these diseases, is the only method that is effective in checking the spread, and if reliance is placed on good nursing, food, and sanitation, without abundant means of isolation, these diseases will spread. I say nothing about cholera, because I understand that of this risk all are aware. It may be introduced, but epidemic dysentery is almost certain.

That the enormous amount of disease usual in war can be prevented is well exemplified in Dr. F. M. Sandwith's lectures on dysentery in THE LANCET of Sept. 5th, 1914, *et seq.* He points out that in the Japanese war against China in 1894 there were 3 deaths from disease to 1 from wounds, but rigid care and attention to sanitation bore their fruit in the Russo-Japanese war of 1904, as the figures were reversed—only 1 died from disease in proportion to 4 who died from wounds.

I am, Sir, yours faithfully,

Harley-street, W., Sept. 30th, 1914. C. W. DANIELS.

THE USE OF ALCOHOL ON THE BATTLEFIELD.

To the Editor of THE LANCET.

SIR,—The great wave of temperance which has swept over civilised peoples in recent years has gained much of its impetus from the efforts of many distinguished members of our own profession. It is therefore with great diffidence that I venture to raise the above question in your columns. Nor do I wish for a moment to advocate any essential modification in the non-alcoholic diet of our army in the field, however anxious I may be to prove my own thesis that the value of alcohol in the present campaign should not be under-estimated.

I will endeavour to put my points as concisely as possible. One of the arguments against the use of alcohol even medicinally, often quoted by scientific temperance lecturers, is the statement that alcohol inhibits phagocytosis, thereby impairing the first line of defence against the infections. I have never discovered the experimental evidence upon which this statement is made, and about five years ago I did some research work on my own account to ascertain its accuracy or otherwise. THE LANCET of Nov. 5th, 1910, published a research which I had made upon the influence of quinine and morphia on phagocytosis, and it was on the same lines that I endeavoured to investigate the influence of alcohol on the same process. My researches, though they entailed much intricate and laborious microscopic work, did not appear to me of sufficient importance to publish until I had confirmed my early conclusions by many repetitions of the experiments, nor was I anxious to enter the lists against the champions of total abstinence until I had made my weapons more effective. The experiments, so far as they went, showed clearly that large doses of alcohol (e.g., the equivalent of 10 oz. for an adult of 10 st.) destroyed the phagocytic action of the blood upon all the common pathogenic bacteria used in my experiments (pneumococci, B. coli, streptococci, and B. influenzæ), but that moderate doses (2 oz.) distinctly increased phagocytic action against these organisms. This confirmed conclusions which I had come to in clinical observations spread over 20 years of active practice, and I have met many able practitioners who have agreed with me on this point.

Last year, at the International Congress of Medicine, a paper was contributed to the section of Bacteriology and Immunity by Professor Besredka, of the Pasteur Institute, on the subject of anaphylaxis.[1] One series of his experiments quoted therein showed how anaphylaxis could be brought about in test animals. They received an injection of some foreign proteid, and on a subsequent date had become so sensitive to this that a second injection produced rapidly fatal results. Another series of experiments was made in which the test animals were divided into two sets; all received the same initial dose of proteid, and all received the same lethal dose on the day of greatest sensitiveness, but one half—the controlled animals—during the interval had been given a certain amount of alcohol. All the teetotal animals died and all the alcoholics survived. It was evident that the alcohol had in some fashion neutralised the poison, stimulated the animal's blood to develop an antitoxin, or narcotised the nervous system so that the higher centres were impervious for a time, and the virulence of the poison abated before the protective effect of the alcohol had passed away.

It is conceivable that, given an injury—say an infected wound—followed by a prolonged exposure to cold and damp, and also in many diseases, conditions are met with closely analogous to this experimental anaphylaxis. Many apparently healthy people are unwitting carriers of pathogenic bacteria, such as various types of influenza bacilli, pneumococci, the large family of streptococci, and the B. coli group. These only need some depressing factor in the shape of danger, hunger, damp, and cold to lose their normal resistance to the germs and fall an easy prey to acute infections which may assume the form of influenzal fever, rheumatism, pneumonia, bronchitis, or septicæmia. When numbers are herded together severe epidemics may easily arise from such a focus, and a virus which has suddenly taken on a greater degree of virulence spreads very rapidly. I have not the slightest doubt that in the first stages of most of this group of cases moderate doses of alcohol are valuable in aiding the natural resistance of blood and tissues. It is too late to be of any service when the patient's tissues are already infiltrated with excess of toxin, and I believe that it is the futile attempts to save dying men by the administration of alcohol which have led so many able observers to say that alcohol is useless as a medicine.

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[1] A translation of the paper was published in THE LANCET of August 16th, 1913, p. 462

I suggest that if there were under the control of company officers a supply of alcohol which could be served out at their discretion, very much in the same way that our naval officers ordered tots of Jamaica rum to the spent sailors in the days of Nelson, there would not be much fear of abuse. It would be distinctly understood that it was an emergency ration, and since the dose need not exceed 1½ oz. of alcohol (good London gin, Scotch whisky, Jamaica rum, or good cognac if available) it would not form a very bulky addition to the ammunition columns. Our heroic troops are not likely to be brutalised by this "prophylactic" use of alcohol, and if it prevented the death of only 1 in every 100 of them it would be well worth the cost and trouble of supply. If I have not misread Mercier's delectable writings upon alcohol and insanity, it is not the use of alcohol which drives men mad, but the insane man who makes insane use of it. I am, Sir, yours faithfully,

H. LYON SMITH.

Bentinck-street, W., Oct. 1st, 1914.

THE BRITISH PHARMACOPŒIA, 1914.

To the Editor of THE LANCET.

SIR,—The new issue of the British Pharmacopœia (1914) will, as has been already announced in your columns, be published on Dec. 31st, 1914. Inquiries have reached me from more than one source with regard to the extent to which the Medical Council will permit the use of the contents of the British Pharmacopœia in medical, pharmaceutical, and kindred works which are about to appear or may hereafter be published. I am accordingly instructed, on behalf of the Council, to say that the Council wholly reserve their copyright in the new work; and that substantial extracts from it must on no account be published without the Council's express sanction. At the same time, no objection will be taken to such reasonable reference to the facts and figures therein set forth as may be properly made for purposes of criticism, review, and summary, or of study and research, but no information of any kind derived from the new issue may be published in book form before Dec. 31st, 1914.

Advance copies[1] of the British Pharmacopœia, 1914, are now accessible at this office, and at 54, George-square, Edinburgh, and 35, Dawson-street, Dublin, for the inspection of the public, from 10 A.M. to 4 P.M. daily (Saturdays 1 P.M.) in order to give to manufacturers, pharmacists, and others interested, an opportunity of ascertaining the changes that are about to be made in official requirements, and of making the necessary arrangements to meet them.

Every person who takes advantage of this opportunity will be expected to observe the conditions above indicated, and will be required to sign an undertaking to that effect.

I shall be obliged if you will insert this letter in your next issue.

I am, Sir, yours faithfully,

A. J. COCKINGTON,
Acting Registrar.

General Council of Medical Education and Registration of
the United Kingdom, Oxford-street, London, W.,
Sept. 30th, 1914.

PS.—The Medical Council Act, 1862, provides that—

"The exclusive right of publishing, printing, and selling the said Pharmacopœia shall vest in the said General Council"

The Copyright Act, 1911, may also be quoted in this connexion:—

"2. (1) Copyright in a work shall be deemed to be infringed by any person who, without the consent of the owner of the copyright, does anything the sole right to do which is by this Act conferred on the owner of the copyright; provided that the following acts shall not constitute an infringement of copyright: (1) Any fair dealing with any work for the purposes of private study, research, criticism, review, or newspaper summary."

IMPERFECTIONS IN THE CUMBERLAND INFIRMARY.

To the Editor of THE LANCET.

SIR,—In the *Hospital* for Sept. 19th may be found a contribution by Sir Henry Burdett, K.C.B., K.C.V.O., on which a few comments are needed. The governors, the committee, and the staff of the Cumberland Infirmary, both honorary and resident, will all feel grateful to the writer of the article for his criticisms and suggestions, even if certain inaccuracies mar his statements.

Sir Henry Burdett contrasts the condition of the infirmary in 1893 with his impressions gathered in June, 1914, and it would seem that so far from improving, the hospital has deteriorated during this period. It is true that he draws attention to certain structural improvements and additions which have cost some £30,000, but he describes a completely equipped ophthalmic department as a "new ophthalmoscope room"! I may mention one of the advances made in the Cumberland Infirmary since 1893 which Sir Henry Burdett has seemingly overlooked. In 1899 a new aseptic operating room, one of the first in the provinces, was completed, but the report credits us with the possession of a new clinical room to each ward which up to the present we have not acquired.

Sir Henry Burdett causes a smile to spread when he writes: "We gathered the impression that at present there is little or no spirit or life in the place. ...... There was a lack of smart contented briskness in the general atmosphere and work going on in the wards." Well, there is life and spirit enough left to repudiate so hasty a judgment, which to those who have other than a superficial knowledge of the infirmary must seem both featureless and uninformed. Sir Henry Burdett is of opinion that the "Cumberland Infirmary is one of those institutions which require someone in authority with technical knowledge and experience who is constantly devoting attention and time to the supervision and enforcement of smartness throughout the wards and those portions of the establishment which are included in the hospital section." One wonders from what source Sir Henry Burdett gathered that there is a pressing necessity for a sort of supervising inspector who would create the smartness which is lacking in our hospital. All of us have some Utopian plans and ideas, but it is usual to cut the coat according to the cloth in hand, and I question if a superintendent (such as may be found in larger hospitals) would help us very much, even if his services were gratuitous. Sir Henry Burdett thinks otherwise, but in spite of the opinion his wide experiences have helped him to form, I think we know how to adapt our expenditure to our means, rather more certainly than he at his visit appears to have been able to do.

"The administration has been sadly changed for the worst." I pick out this condemnatory opinion with considerable amazement, to use a mild expression, and assume that the committee, being the body responsible, has to bear the brunt of this unjustifiable attack, and I am more than at a loss to see where Sir Henry Burdett can have gathered materials for so sweeping a dictum.

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[1] A few typographical errors detected in these advance copies will be corrected in the official issue. The editors will be obliged for the intimation of any errata which may have escaped their notice.

I quite agree with Sir Henry Burdett "that the real happiness and efficiency of a hospital must depend largely upon the presence or absence of devotion and zeal, coupled with a keen interest in the work among all sections of the staff." Sir Henry Burdett, with marvellous insight during short visit, found the staff of the Cumberland Infirmary lacking in these attributes. Sir Henry Burdett in his mercy refrains from stating the conclusions which his inquiries led him to arrive at, but this restraint is cast off in his summing up of the committee of management, which he thinks has greatly deteriorated. It is well known that the composition of a committee depends on mixed circumstances, and our committee, in accordance with modern requirements, consists of a fair representation of all sections of the community. Sir Henry Burdett would imply that wider representation begets narrower views, for he asks, "Has there been a gradual elimination of the former principles which led some of the most distinguished residents within the county to take an active part in the management?"

Sir Henry Burdett opines that only an investigation, conducted by an expert, could cope with what he considers to be the mismanagement of the infirmary by incapable officials who have, in his opinion, usurped the position of control they are not properly qualified to exert. It seems that this view must be the result of some misapprehension on Sir Henry Burdett's part, for I am almost certain that the committee would repudiate the statement that there has been any interference with their scheme of management. His suggestion of a landscape gardener is quite a good one, but we cannot run the risk of the criticism of our subscribers, and in point of fact there is not a hospital in the country with so fine a site and so splendid a distant view. We cannot afford a gardener of any kind, and there are not many people living in Cumberland who keep a landscape gardener or even consult one; nevertheless, it is a provision to be kept in mind when our affairs are sufficiently prosperous and our supporters are urging us on to take such a step.

With regard to Sir Henry Burdett's suggestion that we should leave the whole of the nursing and domestic affairs directly under the control of a lady superintendent, who should have the assistance of a housekeeper, one wonders what he found so far wrong with the matron Miss Sylvia Parker, who gave him the pleasure of taking him round the hospital. In a larger hospital the sisters, nurses, and probationers can be quite well placed altogether under a superintendent of nurses and a housekeeper employed to look after the commissariat, but in a small provincial hospital like the Cumberland Infirmary care has to be taken not to swallow up the income with a larger staff than is actually needful. Sir Henry Burdett would allow us a resident medical officer (I presume a secretary also), a lady superintendent, and a housekeeper, and these together with our two house surgeons would make a big hole in £1000 a year—a luxury we are quite unable to afford even if it was really essential, which, I think, is very doubtful.

I cannot help thinking that Sir Henry Burdett's conclusions are based either on inaccurate deductions or that he has been supplied with data that are for the most part fancies. Open as we are to suggestions and grateful for any just criticism, I can hardly, in justice to the Cumberland Infirmary, allow some of Sir Henry Burdett's statements to pass without these few comments which I have sent to THE LANCET as well as to the *Hospital*.

I am, Sir, yours faithfully,

Carlisle, Oct. 4th, 1914. H. A. LEDIARD.

OSTEO-ARTHRITIS.

To the Editor of THE LANCET.

SIR,—The correspondence in THE LANCET concerning osteo-arthritis has interested me very much. I have long held that wherever there is neuritis there is always arthritis. The latter may not be severe and may not pass to the erosion stage. I agree with Dr. F. J. Poynton that any known micro-organism may set up any known form of arthritis. Where we have only pulpy swelling the affection may be entirely due to toxins. In osteo-arthritis the actual germs are present in the joint. I am sure we are all very much indebted to Dr. R. L. J. Llewellyn and Dr. A. Bassett Jones for the hints on diagnosis. Their suggestions, however, as to treatment are meagre. Given that osteo-arthritis is due to germs, then surely something that definitely combats germs is useful. I did not notice any mention of changes in the spinal cord in these cases. Orr and Rows have shown how germs may reach the cord along nerve sheaths. P. W. Latham has shown the value of spinal blistering in cases of arthritis, and I am strongly of opinion that it is of great value in early and even late cases of osteo-arthritis in remedying to some extent the changes in the cord and checking the ravages of germs. Local applications of heat may do actual harm in some cases by attracting toxins to damaged areas.

I am, Sir, yours faithfully,

Bournemouth, Oct. 1st, 1914. W. J. MIDELTON.

THE LONDON PANEL COMMITTEE AND A "THANKOFFERING."

To the Editor of THE LANCET.

SIR,—In your report of the proceedings of the London Panel Committee on Sept. 29th it is stated that the proposal to present an ambulance to the Red Cross Society as a thankoffering for the receipt of £90,000 was carried. Though the chairman made a humorous reference to the fact that the Commissioners had at last decided to disburse this money, there was nothing in the resolution to suggest that the gift was to be a thankoffering. As I was sent to the Panel Committee to represent those practitioners of St. Marylebone who are robbed through the ineptitude of trying to run a commercial undertaking on "culture," I could only ironically have voted for the gift as a thankoffering.

I should not have called attention to this matter were it not for the fact that extracts from THE LANCET appear in the lay papers, and from the wording of the report it might be inferred that the members of the Panel Committee were overwhelmed with gratitude at receiving something to which they were not entitled. Though some members may have regarded the proposal "to contribute not more than a guinea" as a sop to conscience on receiving remuneration really due to their neighbours, this was not expressed in the resolution.

I am, Sir, yours faithfully,

Wells-street, W., Oct. 5th, 1914. J. M. TWENTYMAN.

THE TREATMENT OF STREPTOCOCCAL INFECTIONS.

To the Editor of THE LANCET.

SIR,—In a leading article in THE LANCET of Oct. 3rd, in which some reference under this heading is made to a paper of mine appearing in the same issue, it is suggested that the hæmolysin of the streptococcus is possibly identical with its endotoxin. Although this may be the case, it is to the possible identity of streptococcal hæmolysin with a genuine exotoxin that I wished to draw attention in my paper. As I have perhaps not made this sufficiently clear, and as the existence of a genuine exotoxin in streptococcal cultures has been frequently denied, it may be stated that in Braun's experiments rabbits were killed within 24 hours by the intravenous injection of 5 c.c. of filtrates of the cultures of certain streptococci. In the experiments carried out by Dr. McNee and myself similar results were obtained with larger doses of filtrate. Apart from the usual test of the sterility of the filtrate our results were farther controlled in the following way:—The filtrate from a culture was divided into two portions, and while one of these was injected directly to a rabbit, the other was incubated over night, a proceeding which almost completely destroyed its hæmolytic power, and injected to a second rabbit. Whereas the first rabbit usually showed signs of severe intoxication and often died, the second was never inconvenienced. This result appeared to us to justify the conclusion that certain streptococci produced a genuine although very labile exotoxin, which was closely allied to streptococcal hæmolysin.

I am, Sir, yours faithfully,

JAMES WALTER MCLEOD,
Assistant Lecturer in Pathology, Medical School,
Charing Cross Hospital.

Oct. 6th, 1914.

HELICON.

To the Editor of THE LANCET.

SIR,—One is bound to endorse the Government policy "not to close all German concerns when they were carried on for the benefit of British labour." What I suggest—the prescribing of British helicon instead of German aspirin—would not have that tendency.

The same amount would be expended for British labour, but the profits would go into the right pockets, not into those of our enemy.

I am, Sir, yours faithfully,

Hove, Oct. 5th, 1914. EDWARD TREVES.

TREATMENT OF THE WOUNDED IN THIS COUNTRY.

To the Editor of THE LANCET.

SIR,—Even medical men may not have too clear an idea of the scheme upon which the wounded in the war are being dealt with in this country, while it is obvious from communications that have appeared in the daily press that many of the public have no conception of the procedure. The articles on the organisation of medical service in the field will do good, but have you sufficiently shown that in the processes of collecting, sifting, and shifting a large proportion of the most serious cases will be retained abroad? There is little information yet as to the work done by the Royal Army Medical Corps with the Expeditionary Force, but that its resources have been sorely tried is well known and that its personnel has exhibited great courage and devotion can be gleaned. It is right to insist that the character and course of the campaign have made the prompt care of the wounded impossible sometimes.

I am, Sir, yours faithfully,

Oct. 5th, 1914. R. W.

THE NATIONAL INSURANCE ACT.

THE WAR AND THE REVISION OF THE MEDICAL BENEFIT REGULATIONS.

IT was generally regarded as likely that considerable revision of the medical benefit regulations and of the terms and conditions of medical service under the Insurance Acts would take place at the end of the current year. The Commissioners have confirmed this in the memorandum to Insurance Committees issued last week, stating that the preparation of revised regulations to come into force on Jan 1st., 1915, had for some time engaged their attention when war intervened, bringing with it the abnormal conditions with which the country is now becoming familiar. In these circumstances the Commissioners, although convinced of the desirability of the changes which they intended to make, have decided that any thorough revision of the existing regulations at the present juncture would involve disadvantages outweighing any benefit which might be expected to accrue therefrom. With this decision the medical profession will heartily agree, and will recognise the spirit of consideration shown for its members in the unprecedented and unforeseen situations in which many of them now find themselves. The Commissioners sum up the position by pointing out that members of Insurance Committees and of the medical and pharmaceutical professions are preoccupied with special problems, local or national, and are voluntarily undertaking exceptional duties in the public interest or in the service of their country which makes it desirable to avoid as far as possible the imposing upon them of the consultations and negotiations involved by substantial revision of the regulations. Further, the Commissioners take into account the number of panel practitioners abroad on active service (with whom they might have included those absent from their practices, although not yet on active service abroad) and express themselves disinclined to introduce changes with regard to which no notice of their intentions could be given "to a section of the medical profession so specially entitled to consideration." As, however, it is possible that the end of war might enable regulations to be considered before the last months of 1915, the Commissioners have decided to make a change as regards the date on which alterations of agreements, both with medical men and druggists, may take place. A draft regulation is accordingly issued by which, as regards the year 1915, the Joint Committee shall have power to alter terms of service upon giving notice to medical practitioners not less than eight weeks before the date of the alteration proposed and not less than six weeks in the case of druggists. The articles in the regulations applying to changes in the terms of agreements are to apply as though the date which may thus be fixed at any time during 1915 were the commencement of a year as contemplated by those articles. Any change of regulations would, however, probably be made at the beginning of a quarter, and is not likely to take place before June 30th, 1915. The only other alteration of existing conditions now in view consists in the proposed substitution of a uniform scheme of certification, to be imposed by the Commissioners, for the existing system of certification in accordance with the rules of a particular society or committee. This would carry into effect, the Commissioners believe, the wishes of the medical profession upon a point as to which it has been widely consulted.

PREGNANCY AND SICKNESS OR DISABLEMENT BENEFIT.

The Insurance Commissioners having recently informed Approved Societies that no distinction should be drawn between incapacity due to pregnancy and that arising from other causes, so far as the payment of benefits is concerned, have issued a memorandum to the same effect to medical practitioners. It states that if a practitioner on the panel is satisfied as to the incapacity for work of his patient a certificate should not be withheld on the ground that the incapacity is due to, or accompanied by, pregnancy. As, however, a special grant has been provided for the cases referred to, incapacity directly or indirectly due to pregnancy should be clearly indicated on the certificate. Practitioners are also warned that the provision of benefit for the pregnant does not affect the criterion of incapacity; that is to say, certificates must not merely be given on account of pregnancy, but only where the medical man is satisfied that the insured person is rendered incapable of work. The action of the Commissioners in this matter may be regarded as part of a Government policy of organised attention to the care of infant life—a subject with which we dealt recently in a leading article on the Government grants for maternity and child welfare.[1]

INSURANCE AND WAR SERVICE.

The Commissioners call attention to the benefits provided for seamen, marines, and soldiers under the Insurance Acts. The authorities will pay 3*d.* weekly for such, deducting 1½*d.* from their pay; but men of the Naval Reserves, Territorial Force, and New Army not insured before mobilisation or enlistment may choose whether contributions shall be paid in respect of them, or whether they will forfeit the benefits to which they would become entitled by insurance. Civilian contributions and arrears do not have to be paid during service, and maternity benefit is the only benefit which survives while service continues. The Commissioners in a circular (Leaflet 29) describe the steps which a wife must take to secure maternity benefit while her husband is serving. Particulars are also given of the benefits to be secured on discharge by insurance during service, through Approved Societies and out of the Navy and Army Insurance Fund.

SANATORIUMS UNDER THE ACT.

The list of sanatoriums approved by the Local Government Board under the National Insurance Act, 1911, for England and Wales has now been revised up to Oct. 1st, 1914, and a copy of the revised list of the approved sanatoriums for the treatment of persons suffering from tuberculosis and resident in England (excluding Monmouthshire) may be obtained, either directly or through any bookseller, from Messrs. Wyman and Sons, Limited, 29, Breams-buildings, Fetter-lane, E.C. Sanatoriums for the treatment of insured persons suffering from tuberculosis and resident in Wales (including Monmouthshire) are now subject to the approval of the Welsh Insurance Commissioners.

THE WAR.

SIR ALFRED KEOGH.

Sir Alfred Keogh, who has been acting as Chief Commissioner with the British Red Cross Society in Paris, has returned to England and taken up a medical appointment at the War Office.

THE WOUNDS OF THE PRESENT CAMPAIGN.

We publish elsewhere some notes upon the wounds of the present campaign by Mr. G. H. Makins, C.B., Consulting Surgeon to the Forces.

GERMANY IN WAR TIME.

An English medical correspondent in Switzerland, with free and early access to medical and other periodicals from Germany, sends us the following notes which we think will prove of interest to medical readers in this country. It will be seen that the notes range over a large number of subjects only connected by the common bonds of war conditions.

Food-supply of the civil population.—A memorandum, drawn up by well-known medical men, recommends the careful saving of wheat flour, since only two-thirds of this is home grown, and the addition of rye flour which normally is exported from Germany. The bran, amounting to 20–30 per cent. of wheat flour, should not be used as fodder but mixed with the flour; and small loaves can be made of bran and rye alone. The use of meat must be restricted, remembering that Germany, next to England, has the largest consumption per head (107 lb. per year). One portion of meat a day is enough, and this economy is especially the duty of the rich for the sake of example. Veal must be given up and some reduction made in the total number of oxen and bullocks, thereby liberating some grazing ground for growing corn. Cheese should become an essential article of diet, making with bran bread, milk, and potatoes an excellent and complete food. Vegetables are to be grown everywhere—in the cornfields between the crops and on dug-up lawns in towns. Maize, chestnuts, peas, lentils, beans, and rice are to take their share in saving corn. The production of beer must be restricted, and people should learn to quench their thirst with water, a sacrifice small in comparison with that of the soldiers in the field. The barley meal so saved can be added in the proportion of 10 per cent. to rye bread, with a little bean meal to avoid dryness. Potatoes should be used neither for feeding cattle nor for making schnaps, and potato meal is also useful for bread making. In this way 20 per cent. of the available rye could be saved in view of a possible bad harvest in 1915. The memorandum, while advising these precautions, disclaims any occasion for anxiety of famine.

Diseases in the fields of war.—Improved hygiene makes itself felt in the more recent wars. In the Crimea for each soldier killed on the field 1·7 died later from wounds, and 6·4 from disease. On the German side in 1870 1·6 died from wounds and only 0·9 from disease. Up to Sept. 10th the health of the German army was reported good, but there was stated to be pulmonary plague in Poland, small-pox in Russia, Belgium, and France, and cholera in Podolia and Warsaw. The German Kaiserin has issued a circular expressing the urgent wish that tuberculosis effort should not be suspended on account of the war. Up to August 17th 2000 Germans had availed themselves of the special qualifying medical examination.

Personalia.—The eldest son of the Bavarian Crown Prince has died within 36 hours of acute poliomyelitis, a disease specially endemic in Upper Bavaria, 44 cases being notified from Munich within less than a year. Some little rivalry has occurred amongst German scientists in getting rid of medals presented to them by English learned societies. Röntgen, of X ray fame, and the physicist Lanard, have given the gold value of their Royal Society medals to help the relatives of fallen soldiers; and Schmid, the pharmacologist of Marburg, followed suit with the Hanbury medal. The wave of patriotic feeling in Germany extends also to medical circles. There is a widespread movement to rid the language of all foreign medical words, and still longer and more unwieldy compounds are to be expected. The following instance of carrying this spirit somewhat further than in corresponding English circles may be of interest. An English medical man asked the publishers of one of the principal German medical papers for the translation rights into English of a vade-mecum for surgeons at the front. The publisher telegraphed in reply: "English edition unnecessary, since the cut-up (*verhauen*) English soldiers are at present in German hospitals and are being treated there according to the German edition"; and the jest was considered sufficiently good to reproduce in all the principal German dailies.

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[1] THE LANCET, Sept. 26th, 1914, p. 805.

THE TERRITORIALS AND CLEANLINESS.

Although everyone can appreciate that all connected with the War Office have their hands full at the present moment, we still think it unfortunate that more attention has not been given to the very urgent problem of the cleansing of the undergarments of the Territorials and other newly raised troops which are at present in training in this country. This is not a matter which can be left to the individual initiative of men who are camped out in strange localities. A proper organisation should be instituted, and we suggest that in every camp a depôt tent should be established where the men could hand in their soiled underwear. Thence it could be sent in bulk to a laundry in the neighbourhood, where it could be cleansed and returned in bulk to the camp to be distributed to the owners. We understand that the Federation of Laundry Associations are perfectly willing to make the necessary arrangements with laundries favourably situated for doing the work, which would be undertaken at as near cost price as possible; the only thing necessary is proper organisation to be established by the officers in charge of the camps. We are informed that up to the present no detailed arrangements with regard to laundries have been made, and if this be so we think that the matter deserves immediate attention. The managers of laundries where odd parcels have been received from the recruits have already discovered vermin in the garments, and unless proper precautions are taken there is no doubt that a very annoying disease will spread rapidly. It is obvious that with men drawn from all ranks of life closely packed together in tents this difficulty is bound to arise unless suitable measures are found to deal with it. On campaigns, as every old soldier knows, the trouble is almost sure to occur, but it should not present itself in troops which have not yet gone to the front.

THE CARE OF THE WOUNDED IN PARIS.

A valued correspondent resident in Paris, who unwillingly left the city when a siege looked imminent, and when the authorities were pressing on all who would be unable to take a personal part in the defences the necessity for taking *les bouches inutiles* elsewhere, was able to return in a few days, and has sent us the following letter:—

Coming back to Paris after a short absence I was struck by the contrast between the stagnation in all the usual occupations of daily life and the immense activity among the many organisations for dealing with the sick and wounded. Every organisation created for this purpose is under the final authority of the French Military Service de Santé. Up to the time of writing it has controlled the collection of the wounded on the battlefields and their distribution to the different hospitals. The advantages of a central authority were, however, diminished by the increasing difficulty of rapidly transporting large numbers of wounded, and, perhaps not readily enough, it was decided to utilise the voluntary assistance so freely offered. It has until recently been very difficult to obtain permission for motors to enter the fighting zone, owing to the occasional misuse of such permits, but it is now recognised that delay in transport must be avoided at all costs, and the Red Cross societies are permitted to send their own motors to collect the wounded on the battlefields.

The distribution of the wounded among the hospitals has been entirely in the hands of the military authorities. They believed that in first filling the provincial hospitals they would avoid the danger of a possible epidemic in Paris, increase the chances of the patients' speedy recovery in country air, and have more empty beds to be used in case the enemy succeeded in fighting up to the gates of Paris. The theory was excellent, but a good deal of dissatisfaction has been caused by the trying and sometimes fatal delays due to the difficulties of train service, monopolised as this was largely forced to be by the transport of troops and supplies. The wounded have sometimes spent three or four days in the train without the attentions of trained nurses at a time when Paris was literally filled with empty hospitals. The Government has now issued an official note from Bordeaux, stating that the unfortunate necessity for hurriedly transporting wounded stretched on straw in wagons previously used for transporting horses was due to the German habit of disregarding the Geneva Convention and bombarding the hospitals and ambulances. The note points out that if these hurried evacuations have had serious results in some cases they have undoubtedly saved the lives of the majority.

Orders have now been issued permitting Red Cross nurses to be in attendance on the trains, and the ambulance motor service which will be run by each hospital will relieve the congestion in the railway transport, always a difficult problem where the movement and victualling of troops and the transport of ammunition must take precedence over the evacuation of the wounded.

While the French are still reserving the Paris hospitals for a possible emergency, the greatest activity is seen among those under English direction. Five hospitals have been organised by the Paris section of the British Red Cross Society and are in full working order, though the section has scarcely been in existence a month. The work begun in the home of the general secretary, Mr. C. Stanhope, has grown so rapidly that the president, Dr. Leonard Robinson, Mr. Bernard Harrison, and the entire staff have moved their headquarters to the Hôtel d'Iéna, which has been lent by the proprietress. A good service of ambulance motor-cars has been arranged for the transport of the wounded from the base of operations to the hospitals organised by this Paris branch. One of them is at the British Hertford Hospital at Levallois-Perret, another in the Hôtel Astoria is directed by the Baronne Le Lasseur, a third in the nursing home of Dr. Suzor, a fourth in the home of Vicomtesse Antoine de Contades and her brother, and a fifth in the Château de Laversine, offered by Baron Robert de Rothschild, is already filled under the direction of Dr. Kaye. The Rev. H. Briggs and a staff of ten chaplains are working hard among all the different institutions where the English wounded are found. Of course, the English soldiers are generally drafted to the English hospitals, but no special attempt seems to have been made to separate the different nationalities. 330 wounded Germans were being cared for at the Val-de-Grâce Military Hospital last week, and there were 50 English wounded in the auxiliary military hospitals in the Lycée Buffon, Boulevard Pasteur. The sympathy of the French for the English is remarkable. 500 people attended the funeral of an English private two days ago and there were many flowers brought for the coffin of the unknown ally. Another English hospital under the direction of the Union des Femmes de France was organised by Dr. Louisa Garrett Anderson and a complete staff of women surgeons, doctors, and nurses. The help of this unit was gratefully accepted by the French Government. The hospital is installed in the building lately completed for the Hotel Claridge in the Champs Elysées. In an incredibly short space of time the shavings and rubbish left by the builders were cleared away and all the paraphernalia of the spacious wards installed. There were from 60 to 70 cases there last week, and an average of 12 have been received every day, but here as elsewhere it is impossible to quote numbers which change constantly. Many very serious cases have been taken here, some of the men being brought in moribund. Most of the wounds are in the legs and arms, and nearly all are from shrapnel. One man had the heavy round iron cap of a shell in the abdominal cavity for seven days. The lighter cases are being sent out to the hospital organised in the Trianon Palace Hotel at Versailles. No cases of tetanus have been received here as yet, but several cases have been brought in to other hospitals. One of the largest and most complete of the new voluntary hospitals in Paris is the American ambulance at Neuilly. The huge new building of the Lycée Pasteur in the Boulevard d'Inkermann has been fitted up with every appliance that money can buy, and the patients are cared for by a staff of American doctors and nurses.

Twenty motor-cars go out daily to pick up the wounded, and their return in the late afternoon is eagerly waited for by a large crowd of people.

Since the authorities do not wish to have any more hospitals in Paris, the £25,000 offered to France by the Canadian Government to establish a Canadian ambulance will be used to organise a hospital outside Paris.

At a meeting in Paris between Sir Alfred Keogh and the other Red Cross Commissioners, Dr. Robinson, the chairman of the Paris branch of the British Red Cross Society, the members of the committee, Lord Robert Cecil and Mr. Stanley, it was decided that as the great need of the moment was ambulances, all those at present at Boulogne and Amiens should be at once brought to Paris. Mr. Stanley undertook to send out ambulances as quickly as they could be shipped across, and for that purpose it was decided to charter a special vessel.

THE BRITISH RED CROSS SOCIETY.

The following is a summary for the week ending Oct. 7th of the work done by the Society :—

Paris.—The various hospitals in Paris are now doing excellent work, and these have been augmented by an additional personnel during the past week, and also by the Scottish unit which is now with the Red Cross Hospital at the Hotel Astoria. The equipment of the 50-bed hospital of the Scottish unit for Paris was despatched on Oct. 1st and reached Rouen on Monday, Oct. 5th, for Paris. The personnel reached Paris on Oct. 3rd, and is located in the upper floor of the Red Cross Hospital at the Hotel Astoria. Active steps are being taken for the despatch of a Scottish unit of 10 motor ambulances, three closed cars, and three lorries covered, to work with the unit, and suitable personnel has been engaged. These motor ambulances have all new chassis, and will probably have a body approved by the British Red Cross Society. It is hoped that some of these will be despatched by Tuesday by steamer from Glasgow to Rouen. The motor ambulances are proving of great and invaluable service to the hospitals. The depôt of stores established by the Scottish branch at Rouen has been replenished from time to time with all the articles needed, as suggested by the society or by the advice of the Scottish Deputy Commissioner on the spot.

Personnel of the hospitals.—During the past week the society has despatched two units to Paris. The first consisted of 10 surgeons, 10 dressers, 44 orderlies, and 33 nurses, and the second of 15 surgeons and 50 nurses. Five surgeons and 4 orderlies have also been sent to Amiens. On Oct. 3rd 3 nurses went to Dieppe and 1 nurse (with the surgeon and X ray plant) to Paris. On the 6th, 50 nurses left for Paris and 3 nurses for Aix-les-Baines, and on the 7th 6 nurses left for Dieppe.

Stores and transport department.—During the week ending Oct. 7th 28 hospitals in Great Britain have been provided with medical stores and comforts. The shipments to France have been very extensive. At Rouen the yacht *Sunbeam* delivered 458 cases of stores, and in addition large consignments have been forwarded to St. Nazaire, St. Malo, Paris, and Dinard. The steamship *Aunis* has been chartered and will sail from London direct to Paris. She will carry about 500 tons of cargo and has been chartered at the rate of 400 francs per day, plus coal, pilotage, harbour dues, and stevedore's pay. The total should not exceed £1000 per month, which is reckoned by the Peninsular and Oriental Company to be a very moderate price. She will ply between London, Rouen, and Paris, taking stores. She can also be sent as far as Bordeaux round the continent if necessary. The stores and transport department is shipping to Paris 1000 cases of medical stores, clothing, and comforts, and further over 2000 blankets, also 80 beds with bedding complete. This represents approximately hospital kit, medical stores, and bedding for about 2000 men. Messengers will leave London for the Chief Commissioner on Tuesdays and Saturdays, returning Thursdays and Fridays unless the Chief Commissioner otherwise determines. The names of those willing to serve as messengers are as follows :—Lord Annaly, F. Hodgson, Esq., Hon. L. Holland, H. Hudson, Esq., Colonel Johnston, D.S.O., I. Malcolm, Esq., M.P., D. O. Malcolm, Esq., C. M. Marling, Esq., C.B., C.M.G., Hon. Sir S. McDonnell, G.C.V.O., Sir W. Miller, Bart., Lord Onslow, D. Pender, Esq., Conway Seymour, Esq., C. Westmacott, Esq., and H. Samuelson, Esq.

THE THREAT OF CHOLERA IN EUROPE.

A communication which we publish this week from Dr. F. G. Clemow, C.M.G., the British delegate on the International Board of Health at Constantinople, deals with the danger from cholera and plague, which existing endemically in their eastern bounds, may become prevalent in the West through military operations. The Board of Trade has received through the Foreign Office official notice that Catania and Piræus are infected with plague. But, as Dr. Clemow says, plague is a disease that offers far less menace to fighting forces than does cholera, and it is with his summary of recent cholera prevalence in the Near East that readers will mostly be concerned. It would seem that Russia by the beginning of September was fairly free from cholera, and that the rumours of its presence in Black Sea ports were not true. But there appears to be no doubt that cholera made its appearance among the wounded in Hungary at least a month ago, so that there must have been some cases in Galicia when war broke out. The Austrian Public Health Department has made a statement that the affected cases which appeared in Moravia and Silesia were all among soldiers sent back from the seat of war. Of the existence of the disease among these there is no doubt, but of its degree of prevalence no one can speak certainly, the presence of dysentery complicating the diagnosis. Dysentery has probably got out of hand, as there is a serious shortage of medical attention with the Austrian troops, although the German troops are accompanied by a large personnel of medical officers and their attendant men. Any absence of medical supervision is disastrous where dysentery is concerned, as early diagnosis and the free use of means of isolation are required to prevent the spread of a disease which is disastrous to armies in time of war.

FIRE PRECAUTIONS IN EMERGENCY HOSPITALS.

The British Fire Prevention Committee desire it to be known to the management of the hospitals and convalescent homes, permanent and temporary, doing emergency work in connexion with war cases that arrangements have been made by the committee to undertake the following in the matter of fire precautions for the impending winter :—

1. The committee will provide a suitable printed "warning" for posting in wards and rooms, copies of which will be supplied gratuitously on written application.

2. They will arrange for experienced professional men to act as honorary fire surveyors with a view to inspecting hospital buildings and homes, and advising such simple precautions as can be taken without expenditure having to be incurred.
3. They are prepared to provide experienced retired firemen from their Special Fire Service Force to act as watchmen or as fire patrols.

All inquiries should be made to the Registrar, British Fire Prevention Committee, 8, Waterloo-place, London, S.W. The committee have submitted to us a specimen of the "warning," which summarises excellently the precautions to be taken against fire in emergency institutions, as well as the steps to be taken on the occurrence of an outbreak.

MEDICAL CASUALTIES AT THE FRONT.

The following additional casualties to officers of the Royal Army Medical Corps in the Expeditionary Force have been reported:—*Killed:* Lieutenant William Ormsby Wyndham Ball and Lieutenant John Crocket.

SECOND EASTERN GENERAL HOSPITAL, BRIGHTON.—Official notification has been received that no further batches of wounded will be sent from the front to the Second Eastern General Hospital at Brighton, the War Office having decided that the finely-equipped building, which was erected, and used for a few terms only, as a grammar school, shall be devoted in future to the needs of the new army—the men forming the great encampments at Shoreham and Seaford on the Sussex coast, and Crowborough, in north Sussex. The hospital now comprises 520 beds, and this number has to be increased immediately to 800. The building was taken over by the military authorities on August 7th, but it was not until Sept. 1st that the first batch of wounded arrived direct from the battle of Mons. Another batch arrived three weeks later, 580 cases in all being treated. The second and last batch of wounded included many very serious cases, but thanks to the skill of the medical staff, coupled with the work of the fully trained Territorial nurses, only two deaths in all have occurred. The operating theatre has been constantly in use.

THE SECOND WESTERN GENERAL HOSPITAL, MANCHESTER.—The fourth train of wounded soldiers, 122 in all, has reached Manchester. There are now 460 wounded in the Military Hospital in Whitworth-street. There are 34 German prisoner patients. Some of the recovering patients who arrived some 10 or 12 days ago have been removed to the Princess-street Hospital in order to make room for new cases which require immediate surgical treatment.

MANCHESTER DENTAL HOSPITAL AND THE TEETH OF RECRUITS.—The staff of this institution has since the beginning of recruiting rendered most efficient aid to those recruits who were able to satisfy the medical inspectors in every respect but one—viz., as to teeth, which were often insufficient in number or unsatisfactory in condition. The amount of gratuitous work done by the staff is enormous. The attendance of would-be recruits for enlistment numbers over 1000. In 297 cases teeth have been supplied. The average attendance is about 40 per day. The committee of the hospital has been obliged to issue an appeal to the public for money to meet the heavy cost of this work.

THE Council of the National Institute for the Blind have undertaken to help, as far as practicable, all men who lose their sight while serving their country in the present war. Names and addresses of those who desire to avail themselves of this offer should be forwarded to the Secretary-General of the Institute, Great Portland-street, London, W.

THE "WAR BABIES" BRANCH OF THE SOLDIERS' AND SAILORS' FAMILIES ASSOCIATION.—Her Majesty the Queen has intimated her great interest in and approval of the Belfast "War Babies" Branch of the Soldiers' and Sailors' Families Association, which was among the first organisations to be started in the United Kingdom. At the Babies' Club, Divis-street, Belfast, during the past four weeks a large number of the wives resident in Belfast of the soldiers fighting for their country have brought their children—from the age of infancy to 2 years—for advice and direction as to their management. Every case is most carefully investigated, so that no unfair advantage will be taken of the aid given, and the numbers are each week increasing.

THE Royal Sanitary Institute is preparing a list of its members on active service, and the secretary would be glad to be informed of the names of those members and associates who hold commissions or who are serving in the Regular or Territorial Forces, and the name of the corps to which they are attached.

AMERICA AND WAR RELIEF.—130 wounded soldiers were admitted into the American Women's War Relief Fund Hospital, Paignton (Devon), last week. The War Office has appointed Lieutenant-Colonel Robert Cardwell Gunning, R.A.M.C. (retired), to be commandant of the institution.—The American Red Cross ship, with medical men and nurses for the belligerent countries, reached Falmouth last week, and separate units have since proceeded to various parts of the theatre of war.

TO THE RELATIVES OF THE WOUNDED.—Relatives of officers and men are informed by the War Office that arrangements have been made for progress reports as to all sick and wounded who are not progressing favourably to be forwarded regularly from the base to the War Office. These reports will be communicated to the next of kin as soon as possible after receipt. All applications as to the condition of the sick and wounded should be made in the case of officers to the War Office, and in the case of men to the Military Record Offices, and private telegrams should on no account be sent to the headquarters of the army in the field or to military offices or hospitals.

THE CHOLERA CORPS.—We understand from Mr. A. White Robertson that, after correspondence with the War Office and the British Red Cross Society, it has been decided that there is no immediate call for the services of this corps. Medical men and nurses who have applied for special training will therefore be free to accept other appointments.

THE PRISONERS OF WAR BUREAU.—The Press Bureau announces that the Prisoners of War Information Bureau has been instituted, with offices at 49, Wellington-street, Strand, W.C. The primary purpose of the bureau is to keep records of information as regards prisoners of war interned in this country in exchange for information about British prisoners of war interned abroad. The bureau has no information as to British prisoners of war in Germany. Inquiries on this point should be made of the War Office.

THE Belgian newspaper *La Patrie*, published at Bruges on Oct. 3rd, contains an account of the manifestation of sympathy by the Belgian soldiers at the English convent for Mr. Samuel Osborn and the English ambulance party. Mr. Osborn was received with cheers, and Mittrailleur Janssens, who speaks English very well, testified to the devotion of the English people for the Belgians and to the "paternal" care of Mr. Osborn in particular. Mr. Osborn, replying, said: "We English thought it our duty to assist you on the field of battle and to succour the wounded as far as possible. You have kindly spoken of me as your father, and if I regard myself as such I must say that I could not have had better or more patient sons to care for."

GUY'S HOSPITAL MEDICAL AND DENTAL SCHOOLS.—The following scholarships have been awarded:—Senior science scholarships for university students: £75, John Maurice Hardman Campbell, New College, Oxford; £35, Frederick Alfred Unwin, King's College, London. Junior science scholarships: £120, Albert Ernest Sawday, Guy's Hospital Preliminary Science Class; £50, Sydney Anselm Sharpe, Guy's Hospital Preliminary Science Class. Entrance scholarships in arts: £50, Edward Emile Delisle Gray, St. Paul's School; £50, Myles Wheeler O'Bryen, Oratory School, Edgbaston. Open scholarship in dental mechanics: £20, Alfred Herbert Bowes. Scholarship in dental mechanics for pupils of Guy's Hospital: £20, Wyndham Brookes Farrington.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—The diploma of L.R.C.P. and M.R.C.S. was conferred upon the following candidates at a special examination held on account of the war on Sept. 24th :—

Hallowes Lloyd Addison, King's College Hospital; Charles Layton Balkwill, Birmingham University; Lancelot White Barlow, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Stanley Batchelor, London Hospital; Tremlett Brewer Batchelor, M.A. Oxon., Oxford University and London Hospital; John Dorrington Batt, Oxford University and St. Bartholomew's Hospital; Lindsay Willett Batten, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Kenneth Benson Bellwood, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; George Albert Berkeley-Cole, Durham and Leeds Universities; Kenneth Biggs, London Hospital; William McHutchison Binning, University College Hospital; Zaki Mikhail Bishara, Cairo and London Hospital; William Herbert Blakemore, Manchester University; Majorie Ada Blandy, Royal Free Hospital; William Houston Boyd, Queen's University, Belfast; James Jackson Brown, London Hospital; Owen Deane Brownfield, St. Thomas's Hospital; Frank Bocquet Bull, L.D.S. Eng., Guy's Hospital; Bruce Burnside, B.A. Cantab., Cambridge University and Guy's Hospital; Lyle John Cameron, M.D. Manitoba, Manitoba University and London Hospital; George D'Rastricke Carr, B.A. Cantab., Cambridge University and London Hospital; Eric Catford, St. Bartholomew's Hospital; Paulin Roger Coevreau, Guy's Hospital; George Frederick Clifton, B.A. Cantab., Cambridge University and University College Hospital; John Stanley Cocks, L.D.S. Eng., Guy's Hospital; William Tregonwell Collier, B.A. Oxon., Oxford University and University College Hospital; William John Cook, M.D., C.M. McGill, McGill University and London Hospital; Lionel Palliser Costobadie, Cambridge University and London Hospital; Richard Irving Dacre, Bristol University; John Horace Dancy, St. George's Hospital; Thomas William David, Cardiff and St. Bartholomew's Hospital; Percy Vernon Davies Charing Cross Hospital; Marcelline de Costa, Ceylon Medical College and Guy's Hospital; Edmund Rupert Dermer, Middlesex Hospital; Mostafa Dia, Cairo and St. Mary's Hospital; Stephen Ormond Dolan, Leeds University; Alexander John D'Souza, L.M.S. Madras, Madras and Middlesex Hospital; Harold Dunkerley, Cambridge University and London Hospital; James Angel Durante, London Hospital; Mohamed Kamil El Kholy, Cairo and University College Hospital; Richard Feltrim Fagan, University College Hospital; Frederick Ernest Feilden, Middlesex Hospital; Hassell Dyer Field, St. Thomas's Hospital; Robert Ovens Fisher, M.B. Toronto, Toronto University and Middlesex Hospital; John Edward Foley, Birmingham University; Edward Dance Fountain, St. Mary's Hospital; Hugo Rudolph Friedlander, St. Thomas's Hospital; Cassidy de Wet Gibb, Guy's Hospital; Gerald Francis Petvin Gibbon, St. Bartholomew's Hospital; Edward Harold Hertslet Granger, B.A. Cantab., Cambridge University and University College Hospital; George Leonard Grant, B.A. Cantab., Cambridge University and London Hospital; Alan Renata Green, M.B., Ch.B. New Zealand, Otago University and London Hospital; Samuel Lionel Green, St. Bartholomew's Hospital; Ernest Richard Gordon Greville, St. Thomas's Hospital; Ernest Frederick Guy, University College Hospital; Norah Hamill, Royal Free Hospital; Ernest Eugene Herga, London Hospital; Arthur Edward Huxtable, Charing Cross Hospital; Laurence Mansfield Ingle, B.A. Cantab., Cambridge University and London Hospital; Rupert William Percival Jackson, B.A. Cantab., Cambridge University and Guy's Hospital; Charles Evans Jenkins, Cardiff and London Hospital; Rosalie Jobson, Royal Free Hospital; Samuel Walter Maslen Jones, Middlesex Hospital; Sydney Hudson Keys, Middlesex Hospital; Gerald Patrick Kidd, St. Thomas's Hospital; Noel Sigismund Koch, St. Bartholomew's Hospital; Gajanan Chintaman Kusumbeker, L.M.S Bombay, Bombay University and London Hospital; Francis Claud Lapage, Cambridge University and Middlesex Hospital; Robert Ancel Leembruggen, Ceylon Medical College and St. Bartholomew's Hospital; Arthur Baker Le Mesurier, M.B. Toronto, Toronto University; Kingsley Wassell Lewis, University College Hospital; James Arthur Liley, London Hospital; Andrew Hunter Little, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Iorwerth Hubert Lloyd-Williams, Middlesex Hospital; Edward Richardson Lovell, Middlesex Hospital; Henry Dundas McCall, B.A Cantab, Cambridge University and St. Bartholomew's Hospital; Francis Oreti MacGibbon, New Zealand and London Hospital; Roderic MacGill, Manchester University; Helen Marion Macpherson Mackay, Royal Free Hospital; Alan Samuel Lack Malcolm, B A. Cantab., Cambridge University and University College Hospital; Edith Marjorie Martland, Royal Free Hospital; Claude Jocelyn Delabere May, Bristol University; Henry Leslie Messenger, L.D.S. Eng., Guy's Hospital; Vaman Raghunath Mirajkar, L.M.S. Bombay, Bombay University and St. Bartholomew's Hospital; Leonard William Mortimer, London Hospital; Arthur Rennie Muir, Cardiff and University College Hospital; Wilfrid Davison Newcomb, B.A. Cantab., Cambridge University and London Hospital; George Marshall Oakden, L.D.S. Eng., Sheffield University and Middlesex Hospital; Guy William Parry, St. Bartholomew's Hospital; Henry Ray Parsloe, London Hospital; Margaret Russell Paterson, Royal Free Hospital; John Ernest Pearce, St. Bartholomew's Hospital; Charles Harry Grenville Penny, L.D.S. Eng., Guy's Hospital; Michael Gladstone Pettigrew, Sheffield University and University College Hospital; Leonard Robert Pickett, L.D.S. Eng., Guy's Hospital; Emma Christine Pillman, Royal Free Hospital; John Pinder, Leeds University; John Alexander Pridham, St. Bartholomew's Hospital; Grantly Dick Read, B.A. Cantab., Cambridge University and London Hospital; Frederick Tavinor Rees, Cardiff and St. Bartholomew's Hospital; Henry Charles Cadell Rennie, M.B., B.S. Adelaide, Adelaide University and London Hospital; Adrian St. Johnston, Cambridge University and St. Thomas's Hospital; Eric Arthur Langford Sansom, University College Hospital; William Goodman Shakespeare, Westminster Hospital; John Patrick Shaw, Middlesex Hospital; Reginald Hugh Simpson, St. Bartholomew's Hospital; Bawa Harkishan Singh, Lahore and Middlesex Hospital; Herbert Smith, Birmingham University; Cecil Spurling Staddon, St. Thomas's Hospital; Edwin Cyril Widmerpoole Starling, B.A. Cantab., Cambridge University and Guy's Hospital; Frank Sykes, Leeds University; Leonard Hankinson Terry, St. Bartholomew's Hospital; George Robert Seager Thomas, B.A. Cantab., Cambridge University and Westminster Hospital; Pensam Thornton, Birmingham University; Naomi Tribe, Royal Free Hospital; Geoffrey Say Trower, Cambridge University and St. Bartholomew's Hospital; Bryan Montague Tuke, Middlesex Hospital; Jocelyn Langton Waller, St. Mary's Hospital; Eric Watson-Williams, B.A. Cantab., Cambridge University and King's College Hospital; Gervas Charles Wells-Cole, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Leslie Herbert Worthy Williams, Cardiff and University College Hospital; and Maurice Ulick Wilson, King's College and Westminster Hospital.

At the Second Professional Examination in Anatomy and Physiology held on Sept. 24th, 25th, 27th, and 28th, for which 62 candidates presented themselves, of whom 43 were approved and 19 were rejected, the following were approved :—

Kenneth Norman Grierson Bailey and Thomas Burton Bailey, St. Bartholomew's Hospital; Herbert Frederic Gustave Berncastle, Guy's Hospital; Kalyanpur Harikar Bhat, Madras University and Charing Cross Hospital; Butros Bishara, Cairo and St. Mary's Hospital; Leslie Graham Blackmore, Middlesex Hospital; Charles James Longworth Blair, St. Bartholomew's Hospital; James Bassett Brash, St. Bartholomew's Hospital; Albert William Abell Davies, Guy's Hospital; Frederick Graham Leslie Dawson, London Hospital; Saad el Din Ahmed El Daab, Cairo and Dublin; Abdel Aziz Hassan El-Zeneiny, Cairo and London Hospital; John Harold Ewen, St. Mary's Hospital; Edwin Francis Fernando, University College; John Turnbull Thomson Forbes, Otago and Guy's Hospital; Arthur Reginald Hart, King's College; Mahdy Sayed Hashish, Cairo and St. Bartholomew's Hospital; Thomas Lowthian Heath, Guy's Hospital; Henry Saumarez Hensman, L.M.S. Madras, Madras Medical College; Eric Blanford Hickson, University College; Stewart Russell Johnston, University College; Ganapathy Mallya, L.M.S. Madras, Madras Medical College; Reginald Stanley Millar, Durham University and Guy's Hospital; Anis Mishriky, St. Mary's Hospital; Bireswar Mitra, L.M.S. Calcutta, Calcutta Medical College; Vijaya Shankar Rao Pandit, Bombay University; Walter Davies Pearman, St. Mary's Hospital; Arthur Winifred Peeris, University College; Walter Erichsen Powell, Charing Cross Hospital and King's College; Hubert Llewellyn Pridham, St. Bartholomew's Hospital; Raghavandra Rau, Madras Medical College and Middlesex Hospital; Rupert Idris Rhys, Arthur Rodd, and Herbert Henry Silley, University College; Maurice Oliver Simpson, Middlesex Hospital: Robert Sydney Steele Smith, St. Bartholomew's Hospital; Vincent Russell Smith, St. Mary's Hospital; Eric Lionel Stephenson, London Hospital; Arthur Anton Thiel, St. Bartholomew's Hospital; Edward Sherman Toogood, B.A Oxon., Oxford University; Shankarlal Kunvarji Vaidya, L.M.S. Bombay, Bombay University and London Hospital; Leonard Heatley Woods, St. Bartholomew's Hospital; and William Yeoman, University College.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the First Professional Examination for the Licence in Dental Surgery held on Sept. 24th, 25th, and 26th, the following candidates were approved in the subjects indicated :—

Mechanical Dentistry and Dental Metallurgy.—John Gordon Ackland Royal Dental Hospital; Geoffrey Walter Allen and Alfred Herbert Bowes, Guy's Hospital; Norman Henry Davey, Leeds University; Frederick Knowles Escritt, Wyndham Brookes Farrington, Edward Garratt Foulston, Philip Green, Douglas Brigstocke Hitchings, Charles Henry Kidner, and Harold Octavius Long, Guy's Hospital; Albert Victor Milton and Robert Orton, Leeds University; Stanley James Peatfield, Guy's Hospital; Enoch Sanders, Liverpool University; Cyril Wells Spendelow, Royal Dental Hospital; Arnold Clough Sutcliffe, Leeds University; Ian Murray Thomson, Guy's Hospital; Edward Francis Vowles, Bristol University; and Maurice Harold Wermig, Guy's Hospital.

Mechanical Dentistry.—Norman John Ainsworth, Royal Dental Hospital; Harry Edward Attkins, National Dental Hospital; Herbert Joseph Barrand, Guy's Hospital; Frederick David Blomfield, National Dental Hospital; Arthur Bowler, Liverpool University; Ellis Gardner Browne and Charles Reginald Cade, Guy's Hospital; Reginald George Joseph Charlesworth and Neville George Compton, Royal Dental Hospital; James Frank Cowell, Liverpool University; James Walter Curtis, Royal Dental Hospital; Stanley Willoughby Augustus Davis, Bristol University; Robert Peter Dewar, London Hospital; Lionel Harold Dixon, Guy's Hospital; Frank Leslie Hooton Fox, Bristol and Guy's Hospital; Robert William Fyffe and Leonard Wilfred Hearn, Sheffield University; Gerald Mackenzie Hickley, Royal Dental Hospital; Oswald Octavius Lloyd, Llewellyn Arwyn Morris, Frank Douglas Neal, and Arthur Llewellyn Payne, Guy's Hospital: John Peter, Royal Dental Hospital; Stanley Edwin Pomeroy, London Hospital; Beresford Tom Richards, Birmingham University; John Cowan Robertson and Simon Sanders, Guy's Hospital; Robert Ferdinand Sievers, Royal Dental Hospital; Norman Leslie Smallbone, London Hospital; Charles Herbert Davenport Smith, Royal

Dental Hospital; Cecil Stanley Southwell, Guy's Hospital; Mansfield John Knox Soutter, National Dental Hospital; Rodney Frederick Jarrett Sterwin, London Hospital; Eleanor Cannell Watterson, National Dental Hospital; and Leonard Gould Whelpton, Guy's Hospital.

Dental Metallurgy.—Barrington Eady and Jenkin Albert Evans, Guy's Hospital; Morgan James Evans, Birmingham University; George Frederick Faustmann, Guy's Hospital; Blanche Sutton Gardner, National Dental Hospital; Alice Dora Headley and Harold Awbery Hill, Birmingham University; William Grant Milton, Bristol University; John Rhys Morgan, Liverpool University; Henry Montgomery Scott Pillow, Guy's Hospital; David Maurice Rees and Valentine Sainty, Royal Dental Hospital; Hugh Muir Smith and Percival Albert Tucker, Guy's Hospital; Sorab Byramji Warden, M.B., B.S. Bombay, Bombay University and Royal Dental Hospital; and Claude Young, Royal Dental Hospital.

“Bacilli and Bullets.”—Sir William Osler's recent address to the officers and men in the camps at Churton has now been issued as a penny pamphlet, entitled “Bacilli and Bullets,” by the Oxford University Press.

A West Country Centenarian.—Mrs. Mary Ann Saunders died last week at Yatton, Somersetshire. She celebrated the 103rd anniversary of her birthday on July 8th last.

St. George's Hospital Medical School.—The Entrance Scholarships in Anatomy and Physiology, of the value of 70 guineas and £50, have been awarded to R. Salisbury Woods, of Downing College, Cambridge, and J. A. Birrell, of the University of Wales respectively.

Westminster Hospital Medical School.—The following awards of scholarships have been made: Guthrie scholarship in arts (£60), J. G. Wilson, Colfe Grammar School, Lewisham; natural science (£60), E. S. Davies, University College, London; anatomy and physiology (£50), N. M. Lewis, Cardiff Medical School.

West London Post-Graduate College.—The autumn session will begin on Monday next, Oct. 12th, at the West London Hospital, Hammersmith-road, W. The practice of this general hospital is reserved for post-graduate students attached to the college. Full information may be obtained from the dean of the college, Mr. Donald Armour.

New Professor of Anatomy at St. Andrews University.—Professor David Waterston, M.A., M.D., C.M. Edin., has been appointed to succeed Professor J. Musgrove in the Bute chair of anatomy in the United College of the University of St. Andrews. Professor Waterston leaves King's College, London, where he has been professor of anatomy.

London Hospital Medical College (University of London).—The following are the results of the Entrance Scholarships:—Price Entrance Scholarship in Science, £100, I. H. Zortman; Price Entrance Scholarship in Anatomy and Physiology for students of the Universities of Oxford and Cambridge, £52 10s., H. D. McIlroy (Jesus College, Cambridge).

Scarlet Fever in Belfast.—During the period embraced between August 16th and Sept. 12th last, 147 cases of scarlet fever were notified, the total number of infectious diseases notified being 187; those in addition to scarlet fever recorded are 15 of diphtheria, 9 of typhoid fever, and 16 of erysipelas. The ordinary public health measures—notification, isolation, hospital treatment, and disinfection—have had no effect whatever in diminishing the occurrence of scarlet fever in Belfast. For the same period the death-rate from all causes was 18·7, while from zymotic diseases it was 5·5, and from chest affections, 4·5.

A Periodical for Lost Refugees.—With the authorisation of the Belgian Minister, Count de Lalaing, a paper, called *L'Echo de Belgique*, is published weekly at 43, Palace-street, London, S.W. The object is to assist the Belgian refugees in this country by giving them, in French and Flemish, a brief summary of the week's news, but, above all, by providing a means of intercommunication. In the flight from their bombarded or destroyed towns and villages members of the same family were often separated from each other. Populations scattered in all directions are now longing to come together again, to discover who has escaped, and to communicate with one another. The first issue of the paper contains several hundred names of refugees who want to know what has become of their nearest friends and relations. Of course, this publication is not a commercial speculation. It is distributed gratuitously among the refugees, and no charge is made for inserting their appeals and inquiries. Those, however, who can afford to buy the paper will assist the work of relief by helping to keep the publication going.

Death of a Medical Veteran.—The death is announced at Audley, in Staffordshire, of Dr. Richard Vernon, in his ninety-eighth year. He qualified L.S.A. in 1846 and obtained the M.D. degree of the University of Glasgow in the same year. For 20 years he was medical officer of health of Audley.

Presentation to a Medical Practitioner.—At the annual distribution of awards to the members of the Falmouth division of the St. John Ambulance Brigade, Dr. Charles Robert Browne was presented with a pair of spurs as a mark of appreciation for his services as honorary instructor, and to congratulate him on his recent appointment as major in the R.A.M.C. (T.F.)

Pharmaceutical Society.—The seventy-third session of the School of Pharmacy of the Pharmaceutical Society was opened on Sept. 30th, when an address was delivered in the lecture theatre at 17, Bloomsbury-square, London, W.C., by Dr. Lauriston E. Shaw. Dr. A. W. Crossley, F.R.S., has resigned the professorship of chemistry at the school, having been appointed to the chair of organic chemistry at King's College, University of London. Professor Henry L. Smith, formerly lecturer in chemistry at King's College, London, and in applied chemistry at King's College for Women, has succeeded Professor Crossley in the Pharmaceutical Society's chair of chemistry.

Literary Intelligence.—Messrs. J. and A. Churchill announce for autumn publication the following new books:—“The Anatomy of the Human Skeleton,” by J. Ernest S. Frazer, F.R.C.S. Eng., lecturer on anatomy at St. Mary's Hospital Medical School (with 219 illustrations); “Medical Diagnosis,” by Arthur Latham, M.D. Oxon., F.R.C.P. Lond., physician and lecturer on medicine at St. George's Hospital, and J. A. Torrens, M.B., B.S. Lond., M.R.C.P. Lond., assistant physician to St. George's Hospital (with about 100 illustrations); and “The Chemistry of Cyanogen Compounds and their Manufacture and Estimation,” by Herbert E. Williams.

Royal Dental Hospital of London, School of Dental Surgery.—On account of the war the dinner for past and present students announced to be held on Nov. 21st will not take place this year. Sir Charles Wyndham will distribute the prizes next year instead of this year, as previously arranged. The prizes for this year will be distributed by the chairman of the managing committee, Mr. Arthur Hood, on Nov. 17th, at 5.30 P.M. No formal invitations will be issued, but old students and friends will be welcome. The post-graduate lectures announced for October and November will be postponed, but may be given in the New Year if circumstances permit.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Alexander, R. Charles, F.R.C.S. Edin., has been appointed Temporary Assistant Surgeon to the Royal Infirmary, Edinburgh.

Carlow, Walter W., F.R.C.S. Edin., has been appointed Temporary Assistant Surgeon to the Royal Infirmary, Edinburgh.

Dolan, Charles, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Dispensary Medical Officer for Ballinamore, County Cavan.

Evans, D. A., L.R.C.P & S. Edin., L.F.P.S. Glasg., has been appointed House Surgeon at the Herefordshire General Hospital.

Graham, James M., F.R.C.S. Edin., has been appointed Temporary Assistant Surgeon to the Royal Infirmary, Edinburgh.

Jardine, Frank E., F.R.C.S. Edin., has been appointed Temporary Assistant Surgeon to the Royal Infirmary, Edinburgh.

McGrath, P., L.R.C.P. & S. Irel., D.P.H., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Ardagh District of the county of Limerick.

Ritchie, J., M.D., C.M. Aberd., D.P.H., has been appointed Medical Officer for the Buchan Combination Poorhouse, Maud.

Webb, C. C., M.B., B.C. Cantab., D.P.H., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Yatton District of the county of Somerset.

Wood, Walter Q., M.B., Ch.B. Edin., has been appointed Temporary Assistant Surgeon to the Royal Infirmary, Edinburgh.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

Ashton-under-Lyne District Infirmary and Children's Hospital.—Senior House Surgeon. Salary £140 per annum, with board, residence, and laundry.

Belgrave Hospital for Children, Clapham-road, S.W.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, residence, and washing.

Birkenhead Borough Hospital.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birmingham City Asylum, Rubery-hill.—Junior Assistant Medical Officer. Salary £200 per annum, with apartments, board, laundry, &c.

Birmingham Union.—Dudley-road Infirmary: Third Assistant Medical Officer and Fourth Assistant Medical Officer. Salary at rate of £180 and £160 per annum respectively. Erdington Infirmary and Cottage Homes: Assistant Medical Officer. Salary at rate of £200 per annum. Selly Oak Infirmary: Assistant Medical Officer. Salary at rate of £180 per annum. Apartments, rations, laundry, and attendance in each case.

Birmingham, Yardley-road Sanatorium and Anti-Tuberculosis Centre.—Third Assistant Medical Officer. Salary £200 per annum, with board and residence.

Bolton Infirmary and Dispensary.—Second House Surgeon. Salary £120 per annum, with apartments, board, and attendance.

Bootle Borough Hospital.—Junior House Surgeon. Salary £100 per annum, with residence, board, and laundry.

Bournemouth, Royal Victoria and West Hants Hospital.—House Surgeon, unmarried, for six months. Salary £100 per annum and extras, with board, lodging and washing.

Brighton County Borough Asylum, Haywards Heath.—Temporary Resident Assistant Medical Officer. Salary £5 5*s*. a week.

Bristol City Asylum, Fishponds.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

Bristol, Cossham Memorial Hospital, Kingswood.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.

Bristol General Hospital.—First House Physician, Second House Physician, House Surgeon, and Casualty House Surgeon for six months. Salary at rate of £120 per annum, with board, residence, &c.

Bristol Royal Infirmary.—House Surgeon and House Physician for six months. Salary at rate of not less than £100 per annum, with board, apartments, and laundry.

Bury St. Edmunds, West Suffolk General Hospital.—Resident Medical Officer, unmarried. Salary £160 per annum, with board, lodging, and laundry.

Camberwell Infirmary, Brunswick-square, Camberwell.—Assistant Medical Officer. Salary £190 per annum. Also Assistant Medical Officer for six months for Infirmary, Brunswick-square, Camberwell, and Gordon-road Institution, Peckham. Salary at rate of £200 per annum. Apartments, board, and washing in each case.

Cancer Hospital, Fulham-road, S.W.—Surgical Registrar. Salary £100 per annum.

Canterbury, Kent County Asylum, Chartham.—Junior Assistant Third Medical Officer, unmarried. Salary £250 per annum, with quarters, board, washing, &c.

Cardiff City Mental Hospital, Whitchurch, near Cardiff.—Second Assistant Medical Officer, unmarried. Salary £280 per annum and all found.

Central London Throat and Ear Hospital, Gray's Inn-road, W.C.—Registrar.

Cheddleton, Leek, Staffordshire County Mental Hospital.—Assistant Medical Officer. Salary £270 per annum, with quarters, board, attendance, and washing.

Chesterfield and North Derbyshire Hospital.—Senior House Surgeon. Salary £140 per annum, with board, apartments, and laundry.

Chichester, Royal West Sussex Hospital.—House Surgeon, unmarried. Salary £110 per annum, with board, residence, and washing.

City of Westminster Union Infirmary, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

Derby, Derbyshire Hospital for Sick Children.—Female Resident Medical Officer. Salary £100 per annum.

Durham County Hospital.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £140 per annum, with board, lodging, and washing.

Hackney Union Infirmary, High-street, Homerton, N.E.—Two Junior Assistant Medical Officers. Salaries £170 per annum, with rations, apartments, and attendance.

Halifax Royal Infirmary.—Second and Third House Surgeons, both unmarried. Salaries £120 and £100 per annum respectively, with residence, board, and washing.

Hartlepool, Hartlepools Hospital.—House Surgeon. Salary £125 per annum, with board, washing, and lodging.

Hospital for Consumption and Diseases of the Chest, Brompton.—House Physician for six months. Salary £5 5*s*. per month.

Huddersfield Royal Infirmary.—Assistant House Surgeon. Salary £80 per annum, with board, rooms, and washing.

Hull Royal Infirmary.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

Leeds Public Dispensary.—Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

Leicestershire and Rutland Mental Hospital, Narborough, near Leicester.—Junior Medical Officer. Salary £200 per annum, with board, lodging, and washing.

Liverpool. Royal Southern Hospital.—House Physician and House Surgeon for six months. Salary at rate of £60 per annum, with board and residence.

London Throat Hospital, 204, Great Portland-street, W.—House Surgeon. Salary £50 per annum.

Manchester, City of.—Assistant Tuberculosis Officer. Salary £350 per annum.

Manchester Education Committee.—Female Assistant School Medical Officer. Salary £300 per annum.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester, Monsall Fever Hospital.—First Medical Assistant. Salary £225 per annum, with board, lodging, and washing

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester Royal Eye Hospital.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

Margate, Royal Sea Bathing Hospital for Surgical Tuberculosis.—Resident Surgeon. Salary at rate of £150 per annum, with board, residence, and laundry.

Metropolitan Hospital, Kingsland-road, N.E.—Temporary Assistant Surgeon.

Middlesbrough, North Ormesby Hospital.—House Surgeon. Salary £120 per annum, with board, apartments, washing, and attendance.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Resident Medical Officer. Also Junior House Surgeon for six months. Salaries £150 and £85 per annum respectively, with board, residence, and laundry.

Mount Vernon Hospital for Consumption and Diseases of the Chest.—Assistant Physician.

Newcastle-upon-Tyne City Asylum, Gosforth.—Locum Tenens Assistant Medical Officer.

Newcastle-upon-Tyne Hospital for Sick Children.—Senior Medical Officer and Junior Medical Officer for six months. Salary £100 and £80 per annum respectively, with board, lodging, and laundry.

Newport (Mon.). Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

Northampton County Asylum, Berry Wood.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

Nottingham City Education Committee.—Third Medical Inspector. Salary £300 per annum.

Nottingham General Hospital.—Assistant House Physician and Assistant House Surgeon for six months. Salary at rate of £100 per annum each, with board, residence, and laundry. Also Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

Otago University, New Zealand.—Professor of Clinical Pathology. Salary £600 per annum.

Portsmouth Royal Hospital.—House Surgeon for six months. Salary £90 per annum, with board, &c.

Preston Royal Infirmary.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

Putney Hospital, Putney Common, S.W.—Resident Medical Officer. Salary £150 per annum, with rooms, board, and laundry.

Ramsgate General Hospital and Dispensary.—Resident House Surgeon, unmarried. Salary £120 per annum, with board, residence, and laundry.

Reading, Berkshire Education Committee.—Assistant Medical Inspector of Schools. Salary £300 per annum.

Reading, Royal Berkshire Hospital.—House Surgeon, House Physician, and Second House Surgeon for six months. Salary each £100 per annum, with apartments, board, and washing.

Rotherham Hospital.—Assistant House Surgeon. Salary £110 per annum, with board, lodging, and washing.

Royal Free Hospital, Gray's Inn-road, W.C.—Male and Female House Physicians and House Surgeons for six months. Also Junior Obstetric Assistant for six months. Board, lodging, and washing provided in each case. Also Two Acting Assistant Surgeons for out-patients. Also Female Assistant Anæsthetist for six months. Salary £75 per annum.

Royal Waterloo Hospital for Children and Women, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

Royal Westminster Ophthalmic Hospital, King William-street, West Strand, W.C.—Radiographer, part time only. Salary 25 guineas per annum. Also House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, and laundry. Also Assistant House Surgeon. Salary (non-resident) £20 for six months, with part board.

Ryde, Royal Isle of Wight County Hospital.—Resident House Surgeon, unmarried. Salary £115 per annum.

St. George's Hospital.—Two House Surgeons for six months. Board and residence provided.

St. Mary's Hospital for Women and Children, Plaistow, E.—Female Resident Medical Officer and Female Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

St. Pancras Dispensary, 39, Oakley-square, N.W.—Resident Medical Officer, unmarried. Salary £105 per annum, with residence and attendance.

Salford Royal Hospital.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

Salisbury (General) Infirmary.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

Sheffield Children's Hospital.—House Surgeon. Salary £150 per annum, with board and residence. Also House Surgeon at East End Hospital (Out-patient Department only). Salary £120 per annum, with board and residence.

SHEFFIELD ROYAL INFIRMARY.—Two House Surgeons and Assistant House Physician for six months. Salary £100 per annum each, with board and residence.

SOUTHAMPTON FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

SUNDERLAND COUNTY BOROUGH EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £300 per annum.

SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, and laundry.

SWANSEA UNION.—Resident Assistant Medical Officer. Salary about £295 per annum.

TAUNTON, TAUNTON AND SOMERSET HOSPITAL.—Senior House Surgeon and Assistant House Surgeon. Salaries £120 and £80 per annum respectively, with board, lodging, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST ON THE SEPARATE PRINCIPLE.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, &c.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £200 per annum, with apartments, board, washing, and attendance. Also Locum Tenens Assistant Medical Officer. Salary as arranged, with apartments, board, and travelling expenses.

WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

WANDSWORTH UNION INFIRMARY, Ouseley-road, Balham, S.W.—Second Assistant Medical Officer, unmarried. Salary at rate of £150 per annum, with board, lodging, and washing.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Senior House Physician. Salary £120 per annum, with board, residence, and washing.

WEST HAM UNION INFIRMARY, Whipps Cross-road, Leytonstone, N.E. —Third Assistant Resident Medical Officer. Salary £180 per annum, with usual residential allowances.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon and Resident Medical Officer for six months. Salary each at rate of £125 per annum, with board, rooms, and laundry. Also Pathologist. Salary £200 per annum.

YORK COUNTY HOSPITAL.—House Physician and House Surgeon for six months. Salary at rate of £100 per annum each, with board, residence, &c.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Rowfant, in the county of Sussex; and at Stanford-le-Hope, in the county of Essex.

New Addresses.

GASKELL, J. F., M.D., The Uplands, Great Shelford, Cambridge.

A fee of 2s. 6d. is charged for the insertion of Notices of Change of Address, which must not exceed two lines.

Births, Marriages, and Deaths.

BIRTHS.

BALLANCE.—On Oct. 2nd, at Selwyn-gardens, Cambridge, the wife of Hamilton A. Ballance, M.S. Lond., of Norwich, of a daughter.

BROOKS.—At Stanway-gardens, Ealing Common, W., to Dr. and Mrs. Ralph St. John Brooks, a son.

PARKHURST.—On Oct. 2nd, at Rathan, Newhaven, the wife of Rodie Parkhurst, M.B., C.M., of a son.

MARRIAGES.

LEE—McNAB.—On Sept. 30th, at Murrayfield-gardens, Edinburgh, Alaister Fraser Lee, M.D., R.A.M.C.T., Lieutenant Highland Mounted Brigade Field Ambulance, to Minnie, second daughter of the late Mr. John McNab, and of Mrs. McNab, Seacraig, Nairn.

PRIDEAUX—THOMAS.—On Sept. 29th, at St. Mary Magdalene, Loders, Bridport, Dorset, Charles Sydney Prideaux, L.D.S. R.C.S. Eng., to Adeline Irene, eldest daughter of the Rev. David and Mrs. Thomas, of The Vicarage, Loders.

DEATHS.

LITTLEJOHN.—On Sept. 30th, at Benreoch, Arrochar, Sir Henry Duncan Littlejohn, M.D., in his 87th year.

O'CONNELL.—On Sept. 20th, killed in action at the Battle of the Aisne, Lieutenant John Forbes O'Connell, M.B., B.S. Lond., R.A.M.C., aged 25 years.

PILGRIM.—On Oct. 1st, at Brighton, suddenly, Lieutenant-Colonel Herbert Wilson Pilgrim, M.B., F.R.C.S. Eng., Indian Medical Service (retired), aged 56 years.

SHAW.—While on a visit to Bournemouth, Harold Bailey Shaw, M.B., B.A., aged 55, Medical Superintendent of the Isle of Wight County Asylum.

VASSIE.—On Oct. 2nd, at Crofton Hill, Lanark, Mary Janet Spears, wife of Alex. H. Vassie, M.B., C.M., 98, Priory-road, London, N.W., only child of the late William Roy Spears, Solicitor and Town Clerk of Kirkcaldy. (No flowers.)

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

BRITISH REGIMENTAL HOSPITALS IN 1799.

IN the year 1799 there was issued from the Horse Guards in London, "By Order of His Royal Highness the Commander in Chief," by Harry Calvert, Adjutant General, a small handbook of "Regulations from the Army Medical Board to Regimental Surgeons," &c. This little book has come into our possession. On p. 18 the "Duties of the Surgeon" are set out as follows: "It is necessary that every Surgeon of the regular forces, militia, supplementary militia, or fencible corps, whether he receives allowances from government for furnishing Hospital, Hospital bedding, serjeant, nurse, orderlies, medicines, materials, &c., or whether he is furnished with the same by government, shall keep in his possession, ready for immediate use, a sufficient quantity of the best medicines and materials, according to the Army Dispensatory No. 2.—An invoice for a full Regimental Chest, calculated for 1000 men, is also added, No. 3. He is likewise to be always in possession of a complete set of instruments for regimental Hospitals, provided at his own expence, agreeable to the annexed list, No. 4. A list of a field set, for more immediate and actual service, is also subjoined, No. 5." The following is a copy of the list No. 4, referred to: "A Compleat Set of Instruments, with Modern Improvements, for Regimental Hospitals. An Amputating Saw, with spare Blade; 1 Metacarpal Saw, with ditto; 24 Curved Needles; 2 Amputating Knives; 1 Catlin; 2 Tenaculems; 1 Bullet Forceps; 1 Pair of Bone Nippers; 2 Screw Tourniquets; 4 Field Tourniquets with Handle; 2 Callico Compresses; 2 Trephines, with sliding Keys; 1 Trephine Forceps; 1 Elevator; 1 Lanticular; a Brush; Key Instruments for Teeth, to fit Trephine Handle; 8 Scalpels; 2 Silver Catheters; 1 Trocar with Spring and introductory Canula; 1 Ditto, ditto, and Canula for Hydrocele; 1 Probang; 1 Long Silver Probe; 1 Large Bougie." The following is a copy of List No. 5, and the surgeon who used the book has inscribed in faint pencil the prices of the instruments:—"A Compleat Set of Instruments for the Field, with the Modern Improvements. An Amputating Saw, £1 1*s.*; 1 Metacarpal Saw, 7*s.* 6*d.*; 12 Curved Needles, 6*s.*; 1 Amputating Knife, 7*s.*; 1 Catlin, 3*s.* 6*d.*; 1 Screw Tourniquet, 10*s.* 6*d.*; 1 Silver Catheter, 8*s.*; 1 Elastic ditto, 9*s.*; 2 Trephines, to fit one Handle, £2 2*s.*; 1 Trephine Forceps, 5*s.*; 1 Elevator, 3*s.* 6*d.*; 2 Scalpels, 4*s.*; 1 Bullet Forceps, 5*s.*; 1 Trocar with Spring & introductory Canula, 14*s.*; 1 Trocar with Spring Canula for Hydrocele, 5*s.*; a Brush, 1*s.*; A Tenaculem, 1*s.* 6*d.*; Thread for Ligatures, 1*s.*" To these he has added in pencil, "case" £1 15*s.*, and he makes the total £9 17*s.* The Regulations say that: "A Regiment consisting of 1000 men, and provided with three medical persons, ought to be furnished with Hospital necessaries and utensils for at least forty patients, forty cotton night-caps, forty sets of bedding, in the proportion of four for every hundred men; each set consisting of one palliass, one straw mattrass, one bolster, three sheets, two blankets, and one rug. Each Hospital ought to be furnished with a slipper bath, or bathing tub, two water buckets, one dozen of Oznaburgh towels, one dozen of flannel cloths, half a dozen of large sponges, combs, razors, and soap, two large kettles, capable of making soup for 30 men, two large tea kettles, two large tea pots, two sauce-pans, forty tin cans of one pint each, forty spoons, one dozen of knives and forks, two close-stools, two bed-pans, and two urinals."

THE WISDOM OF ANIMALS.

To the Editor of THE LANCET.

SIR,—In respect to the universal aversion of cats for water noticed in THE LANCET of Sept. 26th, I may mention an incident which came under my own observation last month. Standing on a bridge carrying a road over a "drain" in Romney Marsh I noticed a cat on one of the wooden supports just preparing to spring at something, probably a vole, in the water below. The cat was about 2 ft. above the water, and the aim for the spring was about a yard away, among some weeds. Suddenly the splash came; there was some struggling, and then the cat scrambled back to the bank, soaking wet, without its prey. The expression of exasperation on its face was human; the look it gave me as it passed was one of such anger as to suggest at once lurid language. Just before disappearing it turned round and glared at me, as if to relieve itself of some of its feelings, and as if to say, "You —— bounder, it was you who spoilt my sport." But I was merely a spectator.—I am, Sir, yours faithfully,

Oct. 5th, 1914. PERCY DUNN.

CENTIGRADE AND FAHRENHEIT.

To the Editor of THE LANCET.

SIR,—An easy way of remembering how to convert degrees Centigrade into degrees Fahrenheit and *vice versa* is supplied by the mem. tech. "See far enough at thirty-two" (C. Fahr. n/f add 32), where $\frac{n}{f}$ stands for 9 over 5. If you want to go back—i.e., from F. to C., go back, simply changing the signs as you go. Thus, subtract 32, multiply by 5, divide by 9. The whole formula may be briefly represented thus:—

"SEE FAR ENOUGH AT THIRTY-TWO
<——————————————."

My explanation is, perhaps, somewhat cumbersome, but the formula once understood is quite difficult to forget.

I am, Sir, yours faithfully,

Brompton, S.W., Oct. 1st, 1914. F. A. HORT.

*** The ordinary formula, for comparison, is $\frac{C. \times 9}{5} + 32 = F.$ —ED. L.

PROPRIETARY MEDICINES IN THE FAR EAST.

REPORTING on the trade of the district of Osaka, Japan, for the year 1913 Mr. Oswald White, the British Vice-Consul, observes that a flourishing little business is done in proprietary medicines, of which China took in 1913 £117,000 worth from Osaka and Kobe. They are mostly in the form of pills, which claim to be specific against most of the minor ills of life. The Japanese themselves consume considerable quantities and sales in China appear to be growing.

PERKINS'S TRACTORS.

To the Editor of THE LANCET.

SIR,—Perhaps some more details concerning Perkins and his Tractors may be of interest to your readers.[1] This subject was dealt with fully in 1842 by Oliver Wendell Holmes in two lectures delivered in Boston on "Homœopathy and its Kindred Delusions." The following is the account which Holmes gave of the inventor:—

"Dr. Elisha Perkins was born at Norwich, Connecticut, in the year 1740" (not 1745 as stated in THE LANCET). "He had practised his profession with a good local reputation for many years, when he fell upon a course of experiments, as it is related, which led to his great discovery. He conceived the idea that metallic substances might have the effect of removing diseases, if applied in a certain manner; a notion probably suggested by the then recent experiments of Galvani, in which muscular contractions were found to be produced by the contact of two metals with the living fibre. It was in 1796 that his discovery was promulgated in the shape of the *Metallic Tractors*, two pieces of metal, one apparently iron and the other brass, about three inches long, blunt at one end and pointed at the other. These instruments were applied for the cure of different complaints, as rheumatism, local pains, inflammations and even tumours, by drawing them over the affected part very lightly for about twenty minutes. Dr. Perkins took out a patent for his discovery, and travelled about the country to diffuse the new practice. He soon found numerous advocates of his discovery, many of them of high standing and influence. In the year 1798, the tractors had crossed the Atlantic and were publicly employed in the Royal Hospital at Copenhagen. About the same time the son of the inventor, Mr. Benjamin Douglass Perkins, carried them to London, where they soon attracted attention. The Danish physicians published an account of their cases, containing numerous instances of alleged success, in a respectable octavo volume. In the year 1804, an establishment, honoured with the name of the Perkinean Institution, was founded in London. The transactions of this institution were published in pamphlets, the Perkinean Society had public dinners at the Crown and Anchor, and a poet celebrated their medical triumph. ...... While all these things were going on Mr. Benjamin Douglass Perkins was calmly pocketing money, so that after some half a dozen years he left the country with more than ten thousand pounds, which had been paid him by the believers in Great Britain. But ...... Perkinism soon began to decline, and in 1811 the tractors are spoken of by an intelligent writer as being almost forgotten."

"Terrible Tractoration" (which was referred to in your note) "is supposed," says the Autocrat, "by those who never read it, to be a satire upon the follies of Perkins and his followers. It is, on the contrary, a most zealous defence of Perkinism, and a fierce attack upon its opponents, most especially upon such of the medical profession as treated the subject with neglect or ridicule."

It is at least some satisfaction to learn that the Connecticut Medical Society expelled Perkins in 1797 for violating their law against the use of nostrums or secret remedies.

I am, Sir, yours faithfully,

E. MUIRHEAD LITTLE.

Seymour-street, W., Oct. 1st, 1914.

FOOD ECONOMY.

THE great war and its probable effect sooner or later on the national food-supply should surely bring home to the nation the importance of economy and of husbanding resources. It is undoubtedly true that very many of us habitually eat too much food, often of the wrong kind, and prepared in the least physiologically useful manner, and that a large amount of foodstuff is continuously wasted. Some intertesting notes on these and kindred subjects, such as the rise in prices, a pure milk-supply, bread and breadmaking, meals for under-nourished scholars, and institutional and school diet, are to be found in the Sixth Annual Report of the National Food Reform Association, published at 178, St. Stephen's House, Westminster, price 6*d*.

AN AUTUMN CRUISE TO MOROCCO.

THE Royal Mail Steam Packet Company announce an autumn cruise to Morocco, the Canary Islands, and Madeira by the *Arzila*, which has been appointed to sail from London in about a fortnight's time. The cruise will last 23 days and include calls at Gibraltar, the ports of Tangier, Casablanca, Mazagan, Saffi, and Mogador in Morocco, and the islands of Las Palmas, Teneriffe, and Madeira. The charge for the round trip is £18.

THE Globe-Wernicke Company, Limited, are anxious to correct the impression which may exist that their company is connected with German interests in any way whatsoever. They state that it is an all British concern with English proprietors and employing only British labour. The word "Wernicke" in the title is due to the fact that many years ago they purchased the patent rights of their "elastic" bookcases from the inventor, a Mr. Wernicke, an American born citizen, and they also purchased the right to use his name which was associated with these patents. Mr. Wernicke is not connected in any way with the company, which has never imported or sold German furniture.

Mr. N. H. Graesser writes as follows: As there is apparently some doubt in regard to the origin of many of the Cresol disinfectants now being offered, I have pleasure in informing you that "Acrosyl" is made throughout at my works at Ruabon, North Wales, by British labour and British capital.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 7th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 1	30 27	S.W.	...	103	67	45	46	48	Fine
" 2	30·23	W.	...	70	60	48	54	56	Overcast
" 3	30·25	W.	...	105	67	56	56	57	Overcast
" 4	30·30	W.	...	94	61	51	52	55	Cloudy
" 5	30·41	N.W.	...	94	63	47	47	49	Overcast
" 6	30·22	N.	...	74	60	49	55	58	Overcast
" 7	30 32	E.	...	102	63	52	49	53	Cloudy

The following magazines, journals, &c., have been received:— Interstate Medical Journal, Monthly Cyclopædia, Journal of State Medicine, Indian Medical Journal, Indian Medical Gazette, Journal of Obstetrics and Gynæcology, British Journal of Inebriety, British Journal of Dental Science, Bulletin of the Johns Hopkins Hospital, South African Medical Record, Medical Journal of South Africa, Eugenics Review, Birmingham Medical Review, Practitioner, Political Quarterly, Therapeutic Gazette, Bio-Chemical Journal, American Journal of Tropical Diseases.

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[1] THE LANCET, Sept. 12th, 1914.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

Thursday.

Section of Dermatology (Hon. Secretaries—S. E. Dore, A. M. H. Gray): at 5 p.m.

Cases:

Dr. J. H. Sequeira: (1) Sarcoids; (2) Myxo-sarcoma.
Dr. H. C. Samuel: Xerodermia Pigmentosa in an Adult.
Dr. S. E. Dore: Multiple Soft Fibromata.
And other Cases.

Friday.

Section of Electro-Therapeutics (Hon. Secretaries—S. Gilbert Scott, E. P. Cumberbatch): at 8.30 p.m.

Discussion:

On the Localisation of Foreign Bodies (including bullets, &c.) by X-rays, to be opened by Sir James Mackenzie Davidson, M.B. (illustrated by means of skiagrams, &c.).

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

Monday.—8 p.m., General Meeting. 8.30 p.m., Introductory Address by the President (Sir John Bland Sutton).

SOCIETY FOR THE STUDY OF INEBRIETY, Rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W.

Tuesday.—3.30 p.m., Council Meeting. 4 p.m., Discussion on Drug Addiction in Relation to Mental Disorder (opened by Dr. R. Armstrong-Jones).

HUNTERIAN SOCIETY, Barbers' Hall, Monkwell-street, E.C.

Wednesday.—8.30 p.m., Council Meeting. 9 p.m., Hunterian Society Lecture:—Sir Dyce Duckworth, Bart.: The Patient and the Disease.

SOUTH-WEST LONDON MEDICAL SOCIETY, Bolingbroke Hospital, Wandsworth Common, S.W.

Wednesday—9 p.m, Dr. A. Whitfield: Lichen Planus, its Varieties and Treatment. (Lantern Demonstration.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Museum Demonstrations for Advanced Students and Medical Practitioners:—

Friday.—5 p.m., Prof. A. Keith: Specimens illustrating Gunshot Injuries of the Head—Ancient and Modern.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Monday.—10 a.m., Dr. Simson: Diseases of Women. 10.30 a.m., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Eye Department. 5 p.m., Lecture.

Tuesday.—10 a.m., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 p.m., Lecture.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 a.m. Mr. Souttar: Demonstration of Minor Operations. 12 noon Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye. 5 p.m., Lecture.

Thursday.—9 a.m., Dr. Bernstein: Bacterial Therapy Department. 10 a.m., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye. 5 p.m., Lecture.

Friday.–10 a.m., Dr. Robinson: Gynæcological Operations. 10.30 a.m., Surgical Registrar: Demonstration of Cases in Wards. 12.15 p.m., Lecture:—Dr. Bernstein: Applied Pathology. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 p.m., Lecture.

Saturday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 12 noon, Lecture:—Mr. Souttar: Surgical Anatomy of the Abdomen. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

Tuesday.—3.30 p.m., Lecture:—Dr. F. E. Batten: Clinical Cases.
Friday.—3.30 p.m., Clinical Lecture:—Dr. G. Stewart: Localisation of Cerebellar Tumours.

THE THROAT HOSPITAL, Golden-square, W.

Monday.—5.15 p.m., Special Demonstration of Selected Cases.
Thursday.—5.15 p.m., Clinical Lecture.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

Tuesday.—4 p.m., Dr. J. L. Bunch: Salvarsan and Syphilis.
Thursday.—6 p.m., Chesterfield Lecture:—Dr. M. Dockrell: Baldness and its Treatment.

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

Thursday.—Ancoats Hospital, Mill street.—4.30 p.m., Dr. D. E. Core: Disseminated Sclerosis.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT [illegible] REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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We cannot prescribe or recommend practitioners.

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THE LANCET, OCTOBER 17, 1914.

The Presidential Address

ON

CANCER OF THE DUODENUM AND SMALL INTESTINES.

Delivered before the Medical Society of London on Oct. 12th, 1914,

BY SIR JOHN BLAND-SUTTON, F.R.C.S. ENG., LL.D.,

SURGEON TO THE MIDDLESEX HOSPITAL.

GENTLEMEN,—The distribution of cancer in the section of the alimentary canal known as the gastro-intestinal tract is remarkable. Cancer is very common in the stomach, but in the intestine between the pylorus and the ileo-cæcal valve it is uncommon. Primary cancer is rare in any part of the small intestine, but it occurs more frequently in the duodenum, short as it is, than in the jejunum or the ileum.

CANCER OF THE DUODENUM.

A study of the effects produced by cancer of the duodenum shows that the time-honoured division of this section of the small intestine into first, second, and third parts is of little use for the purposes of clinical medicine. It is more convenient, following Sherren, to call the portion above the bile papilla the supra-ampullary segment, the portion containing the bile papilla the ampullary, and the remainder the infra-ampullary segment.

Supra-ampullary Cancer.

Duodenal ulcer is a common affection, and observations made on the living in the course of operation and on the dead have shown that the ulcer, for it is nearly always solitary, occurs most frequently in that section of the duodenum immediately adjacent to the pylorus. The chronic indurated duodenal ulcer is usually situated in the first 2 cm. of the duodenum, and four-fifths of the patients are men.

Many surgeons who have had great experience in gastric surgery believe that a chronic ulcer of the stomach is a precancerous condition. There is much evidence to support the view that a chronic gastric ulcer, like a chronic ulcer of the leg, a lupus patch, or a chronic syphilitic ulcer of the tongue, occasionally becomes cancerous. All admit the difficulty of early diagnosis in cancer of the alimentary canal from the pylorus downwards; the disease furnishes no sign until it becomes septic or obstructs the lumen of the gut. This explains our great ignorance of the early stages of cancer arising in the stomach, duodenum, and on through the intestine to the anus. It is insisted by some surgeons that if chronic gastric ulcers are liable to become cancerous the same changes should affect chronic duodenal ulcers. Observations teach that cancer of the duodenum is a rare disease, and there is no evidence that it arises in a chronic duodenal ulcer. Malignant disease of the duodenum of any kind is uncommon, and few specimens of cancer of the small intestine are preserved in the hospital museums in London. This is sufficient to indicate not only that the disease is uncommon, but the important fact that a cancer of the duodenum is rarely excised by surgeons. The only example of malignant disease in the supra-ampullary section of the duodenum I have seen associated with a chronic duodenal ulcer was a sarcoma. A man, aged 55, had well-marked symptoms of pyloric obstruction, and at the operation a polypoid mass could be felt in the duodenum and was easily pressed into the pyloric ring. There was a well-marked scar on the serous surface of the duodenum opposite the pylorus. I resected the pylorus with the adjacent part of the stomach and the duodenum to within half an inch of the bile papilla. The duodenum was closed and the stomach also. Union of stomach and small intestine was re-established by a posterior gastro-jejunostomy. The parts exsected show a fungating growth springing from the floor of the chronic ulcer. Microscopically it is a spindle-celled sarcoma.

The post-operative course of this case is of some interest. A few days after the operation the duodenal stump leaked, and much bile-stained fluid escaped through the lower angle of the abdominal incision. Frequently the fluid was quite clear, alkaline, and excoriated the skin. This fluid was mainly pancreatic juice, and in a few days the patient was in the condition of Pawlow's famous dog. This animal had an artificial pancreatic fistula, and the escaping fluid eroded the skin. The dog was tied up in the laboratory and at night scraped the plaster from the wall and lay with its belly in the débris. This suggested a plan of treatment, and a bed of sand was prepared for the clever dog, and the pancreatic juice no longer eroded the skin. I did not give my patient a bed of sand, but the erosion of the skin was prevented by covering the skin surrounding the fistula with gauze or lint soaked in paroleine.

A perusal of Pawlow's experimental observations helped me a great deal in the management of my patient. We know the average amount of fluid secreted daily by important organs, such as the liver, kidneys, and stomach, but no one has determined the average amount of fluid secreted by the pancreas, because the pancreatic secretion varies in quantity with the nature of the food. The greatest stimulant is fat. In my patient there were times when the fluid flowed in an almost continuous stream and quite clear. This happened when he swallowed milk. A fat-free dietary was then arranged, consisting of whey, beef-tea from which fat was carefully removed, water, and tea. The fistula soon closed. It was unfortunate that after piloting the patient through many difficulties he died a month after operation with apparently an abdominal dissemination of the disease. The man being a Jew his relatives refused a post-mortem examination.

Circum-ampullary Cancer.

Cancer arising in the duodenal mucous membrane around the bile papilla is known as circum-ampullary cancer, in order to distinguish it from cancer arising in the ampulla or in the common bile-duct, but the three varieties lead to obstruction of the bile-duct, jaundice, and distension of the gall-bladder. There can be little doubt that cancer of this section of the duodenum would often escape detection if it were not for the obstruction it offers to the flow of bile from the common duct. It is very difficult to distinguish clinically between circum-ampullary cancer, ampullary cancer, and malignant disease of the head of the pancreas, for all give rise to obstructive jaundice often associated with an over-distended gall-bladder.

Cancer of the Ampulla.

From a practical standpoint the distinction between cancer arising in the mucous membrane

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of the duodenum near the ampulla and cancer arising in the ampulla may not be important, but primary cancer of the ampulla is interesting in itself and exhibits some remarkable peculiarities. Nowhere in the body does so small a growth lead to such grave interference with digestion. A cancerous growth, sometimes no larger than a cherry, will block the outflow of bile and pancreatic juice, and cause intense jaundice and great emaciation by interfering with digestion in consequence of the obstruction to the outflow of pancreatic juice. The three clinical signs of cancer of the ampulla are painlessness, intense jaundice, and great emaciation. The pathological features of the disease are its slight tendency to infiltrate surrounding structures, the infrequency of dissemination, and the enormous dilatation of the main bile-ducts and the gall-bladder. A feature of cancer of the ampulla which distinguishes it from cancer of the gall-bladder is the infrequency with which it is associated with gall-stones. In spite of the local nature of the disease it quickly destroys life. When cancer of the ampulla has caused jaundice death usually follows within six months.

The daring resourcefulness of modern surgery is well exemplified in the attempts to deal with this singular form of cancer, and there can be little doubt that some means will be found for dealing with it successfully. Some valuable papers have been written on this subject by Hartmann, Körte, Schuler, Kausch, and Upcott. An American surgeon, Outerbridge, has recently collected 100 reported cases.

Very few specimens of ampullary cancer have been described in London, and there are few specimens in the metropolitan museums. Perhaps it is only necessary to draw attention to this deficiency in order to have it remedied.

Cancer of the Transverse or Infra-ampullary Duodenum.

This is the common place for duodenal cancer. The symptoms associated with it are like those set up by cancer of the pylorus, but the vomited matter contains bile and pancreatic juice and is sometimes very offensive. The cancer is usually of the constricting type, and the duodenum above the constriction becomes enormously distended. The dilated stomach and duodenum constricted by the pylorus resemble a bilocular stomach. Cancer sometimes arises in the middle of the transverse portion of the duodenum, and the growth involves the vena cava and the superior mesenteric vessels. A constricting cancer in this part of the duodenum may be so hidden as not to be visible until the gut is opened. Rolleston has seen the channel of the gut so narrowed that its lumen in the cancerous section would only admit the passage of a pencil.

I had an opportunity of operating on a man in whom the duodenum was completely obstructed by cancer. The patient, aged 56, was invalided from Burma on account of persistent vomiting and rapid emaciation. Cancer of the stomach seemed to be the most probable cause of the illness, but no lump could be felt in the stomach or its neighbourhood. The vomiting resembled that seen in the condition known as a "vicious circle" after gastro-jejunostomy; it was very offensive. At the operation the stomach was found to be contracted, and on turning it over to examine the posterior surface I found a small contracting growth in the middle of the third part of the duodenum. This hard ring of cancer completely obstructed the gut, so that the bile and pancreatic juice regurgitated into the stomach, where they mingled with the gastric juice and ingested fluids to be ejected as filthy vomit. The duodenum above the stricture was enormously dilated and produced an appearance like a bilocular stomach. The cancer had involved the walls of the duodenum and implicated the superior mesenteric vein; excision of the affected area of the gut was impracticable. Posterior gastro-jejunostomy was performed, and the distended section of the duodenum was also anastomosed with an adjacent coil of jejunum. The vomiting ceased after the operation, and the patient began to take food freely and assimilate it. Pain ceased, and we hoped that his life might be prolonged. Cardiac dyspnœa began to cause trouble, circulatory complications arose, and he died 14 days after the operation. A post-mortem examination confirmed the opinion, formed at the time of the operation, in regard to the impracticability of removing the cancerous portion of the intestine, for it involved the pancreas extensively as well as the large blood-vessels.

In the infra-ampullary cases the vomit always contains bile and pancreatic juice; this is of diagnostic value. Pancreatic juice can be demonstrated by the digestion of fibrin in the filtered vomit, with the addition of a few grains of bicarbonate of soda.

CANCER OF THE JEJUNUM AND ILEUM.

Tumours of the jejunum and ileum are interesting pathologically and clinically. A tumour of any kind in the small intestine is rare, and those belonging to the benign group are, as a rule, pedunculated; the propulsive movements of the intestine not only affect the contents, but influence tumour formations within its walls. The simple tumours arising in the intestinal walls may be lipomas, some are described as myomas, and many as sarcomas, but whatever the structure the constant propulsive efforts of the intestine tend to force the tumour towards the lumen of the bowel until it projects within it covered merely by a layer of mucous membrane. The danger to be feared from such a tumour is invagination, or intussusception, of the gut, for the tumour, acting as a foreign body, is urged along the bowel, and being fixed to the bowel wall drags it in and produces an intussusception which, if unrelieved by art or the timely sloughing of the intussusceptum, ends in fatal obstruction.

The peristalsis of the small intestine probably exercises moulding effects on deposits of cancer within its walls as well as on benign tumours; this applies to secondary as well as primary deposits. A man with disseminated melanoma was admitted into the Middlesex Hospital with intestinal obstruction. In the face of widespread melanomatous deposits an operation for the relief of the obstruction was regarded as useless; to the astonishment of the physician the symptoms abated and the patient passed a long slough of intestine which proved to be a piece of ileum containing a deposit of melanoma. This had led to intussusception, and the intussuscepted piece of gut sloughed and the man recovered.

The museum of the London Hospital contains a portion of ileum in a state of intussusception caused by a secondary deposit of melanocarcinoma. The specimen was obtained from a woman admitted with signs of strangulated femoral hernia; at the operation the supposed hernia proved to be an enlarged lymph-node charged with black pigment. The woman died, and the invaginated gut was discovered after death. The seat of the primary growth is not stated.

CANCER AND ACCESSORY PANCREATIC TISSUE.

A consideration of tumours of the small intestine would be incomplete without reference to the suggestion that cancer of the small intestine may arise in an accessory pancreas. Small detached masses of pancreatic tissue have been detected in the stomach near the pylorus and in the duodenum; they may be situated in the mucosa, the muscularis mucosæ, or in the muscular layer of the intestine, and measure 3 or 4 cm. in diameter. An accessory pancreas is occasionally situated at the apex of a diverticulum. Although such diverticula usually arise in the duodenum, they have been observed in the lower parts of the ileum and regarded as persistent Meckelian diverticula. A pancreatic and a Meckelian diverticulum have been found in the same individual. It is possible that pancreatic diverticula are produced by traction; they are by no means harmless, and several cases have been reported in which a diverticulum, with a pancreas at its apex, has invaginated into the bowel and produced intussusception. In a remarkable case reported by O'Connor an inverted diverticulum caused intussusception in a boy aged 13. On the fourth day after the attack he passed 11¼ inches of gangrenous intestine with the diverticulum attached.

It is necessary to mention accessory pancreas when considering cancer of the duodenum and small intestine, because those pathologists who still believe that cancer arises in embryonic vestiges think it probable that this perversion may arise in islands of pancreatic tissue. There is no evidence to support this theory, nor that which attributes duodenal cancer to morbid changes in Brunner's glands. Like the theory attributing parotid chondromas to relics of Meckel's cartilage, they belong to the domain of fiction. Such theories indicate that some pathologists, like poets, are not devoid of imagination.

CANCER AT THE END OF THE ILEUM.

The frequency of ulcer and cancer at the pylorus is not repeated at the ileo-cæcal valve. This part of the small intestine, notwithstanding its narrowness, is rarely attacked by morbid growths, and they have been rarely the subject of critical analysis. For many years I have been interested in this question and find obstructive growths at the valve are of four kinds: (1) cancer arising in the ileum; (2) cancer arising in the cæcum; (3) malignant growths in the vermiform appendix; and (4) hyperplastic tubercle of the ileum.

Cancer at the ileo-cæcal junction, in the cases I have seen, has been of the circular contracting type and leads to almost complete occlusion of the opening. The contraction is so extreme that it is necessary to make a careful search in order to detect it, and as a rule the disease is more easily felt than seen. It is a remarkable thing that such inconspicuous growths give rise to widespread metastasis in the abdomen. For example, an elderly woman had a large ovarian cyst associated with frequent vomiting, two conditions forming a sinister combination and suggestive of malignant disease of the bowel associated with the ovarian cyst. The removal of the cysts—there were two, one as big as the patient's head and the other the size of a turkey's egg—was easily accomplished, but the presence of much solid matter in the walls of the cyst convinced me that the solid matter was implanted cancer. The distended condition of the small intestines led me to search carefully for an obstruction, and I found a thin, narrow, hard ring of growth completely obliterating the ileo-cæcal orifice. The ileum was joined to the ascending colon by a lateral anastomosis. The woman survived and lived free from pain and able to look after her house for 12 months. In this instance the primary lesion, though contracting and atrophic, had shed cancerous cells into the general peritoneal cavity which had fallen on the walls of the ovarian cysts and converted them into solid cancerous masses.

The frequency with which ovaries and ovarian cysts are converted into solid blocks of cancer by the implantation of cells shed from a primary focus in the gastro-intestinal tract is not properly appreciated by gynæcologists, but I am glad to note that the number of converts is steadily increasing, and my scepticism in the existence of primary cancer of the ovary is intensified by further experience.

Cancer arising in the cæcum does not obstruct the lumen of the bowel at such an early stage as when it arises in the colon, but there is an anatomical arrangement by which cancer arising in the cæcum can obstruct the ileum. The terminal two inches of the ileum rests in close contact with the wall of the cæcum; if cancer or hyperplastic tubercle attacks the mucous membrane of the cæcum immediately in relation with the terminal portion of the ileum, the intermediate tissues become infiltrated with growth, the walls of the ileum are implicated, and ultimately its lumen becomes obstructed.

A study of the specimens of primary cancer of the small intestine preserved in the hospital museums in London shows that the disease presents the same characters as in the colon. Some are of the annular contracting type, constricting the gut as if a piece of cord had been tightly tied around it. In others the disease sprouts like a cauliflower into the bowel; there is a massive form which envelops the intestine with a hard collar of new growth. An annular constricting cancer strictly limited to the ileal aspect of the ileo-cæcal valve is associated with signs of intestinal obstruction, rendering accurate localisation of the obstruction a matter of uncertainty. There is nothing in the signs and symptoms approaching the definiteness characteristic of a constricting cancer of the third part of the duodenum.

The chief feature connected with cancer of the gastro-intestinal tract is its extreme frequency at the pylorus and its rarity at the ileo-cæcal valve. The age distribution of cancer of the small intestine agrees with that of the stomach and colon.

PRIMARY MALIGNANT DISEASE OF THE APPENDIX.

In order to show the difficulty of properly assessing the frequency of cancer at the ileo-cæcal valve the following case is useful:—

A man, aged 73, came under observation with symptoms of chronic intestinal obstruction, and a lump was easily detected in the region of the cæcum. It was freely movable and painless. The age of the patient, the absence of fever and tenderness, the presence of a movable swelling in the right iliac fossa, accompanied with intestinal stasis and vomiting, indicated that the mass was in all probability a cancerous growth in the cæcum.

This view being confirmed in the course of the operation, I excised the cæcum and joined the ileum by an end-to-side anastomosis in the ascending colon. The patient died suddenly six days after the operation.

The cæcum and exsected portion of the ileum were preserved, and on subsequent examination the mass proved to be a primary tumour of the vermiform appendix which had infiltrated the adjacent walls of the ileum and cæcum, including the segments of the valve. Microscopically the growth possesses the features of a sarcoma. There were no signs of dissemination, and no enlarged lymph-nodes were detected. Such growths in the appendix are probably rare.

HYPERPLASTIC TUBERCULOUS AFFECTIONS IN THE NEIGHBOURHOOD OF THE VALVE.

An analysis of the various growths which arise at the ileo-cæcal junction makes it evident that some of the tumours in this situation labelled after operation cancer are in some instances tuberculous. The hyperplastic form of intestinal tuberculosis is most common in the cæcum and cæcal end of the ileum. It differs from other varieties of tuberculous disease in that the lesion is not destructive and leads to an increase in the bulk of the part affected. The disease begins in the submucous or subserous tissue and spreads to the other coats of the bowel. The new tissue contains clumps of giant-cells and sometimes calcareous deposits. Occasionally the thickened bowel is enveloped in a mass of fibro-fatty tissue such as sometimes surrounds chronic tuberculous kidneys. The cavity of the bowel is narrowed, sometimes a track no larger than a writing-quill remains, and the ileo-cæcal valve is obstructed; in rare cases the disease is limited to the valve. This condition is very liable on mere naked-eye examination to be mistaken for cancer of the ileum or cæcum, and it is very probable that some cases in which the cæcum has been excised for a tumour casually regarded as cancer and the patients have remained free from recurrence the disease was really hyperplastic tuberculous disease.

From the operative point of view the distinction between cancer and hyperplastic tubercle is not important because the treatment for both conditions is the same—excision, but is a matter of great concern in regard to prognosis. Cancer and hyperplastic tubercle left to run their course end fatally, but the latter is curable by excision. Hyperplastic tubercle of the bowel was not recognised till 1891; then it received attention from Billroth, Hartmann, and Pilliet. Very little attention has been given to the disease in Britain, although there is reason to believe that tuberculous disease attacks the cæcum more frequently than any other part of the gastro-intestinal tract.

MELANOSIS OF THE COLON.

Melanosis is a morbid condition of the mucous membrane of the colon that has received little attention in Great Britain. My experience is limited to one example.

A septuagenarian spinster had suffered from recurring attacks of intestinal obstruction. At last colostomy was necessary, and a constricting annular cancer was excised from the iliac colon. Four months later the cut ends of the bowel were rejoined successfully. The mucous membrane of the excised portion of the gut was of an inky blackness, but the cancer in the bowel had the microscopic structure common to primary cancer of the colon and was devoid of pigment. The blackness of the mucous membrane depended on a deposit of pigment in the connective tissue of the mucosa.

I am unable to state how much of the colon was pigmented because the patient recovered from her operation, but I examined her thoroughly with the object of finding evidence of a melanoma or an ulcerated pigmented wart, but found none. This pigmentation of the colon puzzled me. During the Christmas vacation, 1912, I visited the museum at Friedrichshain, Berlin. There I saw a colon with the same deep pigmentation. The intense blackness affected the colon uniformly, being sharply limited above the ileo-cæcal valve and extending thence to the anus. The terminal portion of the vermiform appendix was obliterated, but the mucous membrane of its proximal unobliterated part shares in the pigmentation.

Professor Dr. Ludwig Pick has discussed in an exhaustive manner the anatomical, histological, and chemical features of this rare form of pigmentation. He also gives a useful summary of nearly a score of similar cases, beginning with one recorded by Virchow (1847) and three described in England by C. J. Williams (1867), G. Newton Pitt (1891), and H. D. Rolleston (1892). Pick states that the colouration is not due to metallic deposit; it is essentially a pigmentation of the connective tissues of the mucous membrane and hæmatogenous.

Although the pigmentation begins, as a rule, at the ileo-cæcal valve and extends to the anus, cases have been observed in which it does not involve the whole length of the colon. When the colic membrane is involved throughout the pigmentation is discoverable at the anus by means of a speculum. The condition is mainly a clinical curiosity, but if detected in the course of a clinical examination it might have an undue significance attached to it. It will be useful to have some further observations on this curious pigmentation.

CONCLUSION.

I selected cancer of the small intestine as the subject of the address this evening because it is a matter neglected in the ordinary works on surgery. It is intended to hold a discussion at our next meeting on the Surgery of Tumours of the Large Intestine, and we hope to have an exhibition of illustrative specimens of tumours of the small intestine as well as tumours of the cæcum and colon. The council is hopeful that a series of specimens illustrating hyperplastic tuberculous disease of the cæcum will be shown. This disease, often mistaken for cancer of the cæcum, has not, as already mentioned, received much attention in this country, although Henri Hartmann made it the subject of the oration in 1911. The society will also be grateful for the loan of specimens illustrating primary cancer of the vermiform appendix, a disease concerning which there is much uncertainty. It will also be useful to obtain some further observations on the curious pigmentation of the colon.

CARDIFF MEDICAL SCHOOL.—At the last meeting of the council of the University College of South Wales it was stated that the anonymous benefactor, whose offer of a large sum for the building of the new medical school at Cardiff was accepted early this year (*vide* THE LANCET, Feb. 21st, 1914, p. 568), had since promised a further sum of £10,000 towards the building fund of the medical school.

Introductory Address

ON

THE POSITION OF PSYCHIATRY AND THE RÔLE OF GENERAL HOSPITALS IN ITS IMPROVEMENT.

Delivered at the Opening of the Winter Session, 1914–15, at the Middlesex Hospital on Oct. 1st, 1914,

BY C. HUBERT BOND, D.Sc., M.D. EDIN., M.R.C.P. LOND.,

COMMISSIONER OF THE BOARD OF CONTROL AND EMERITUS LECTURER IN PSYCHIATRY AT MIDDLESEX HOSPITAL MEDICAL SCHOOL.

GENTLEMEN,—In the first place I desire to express my thanks to the council of the medical school for the honour they have done me in asking me to give the introductory address which is customary at the opening of each of our winter sessions. That I particularly esteem the privilege will be readily appreciated when I remind you of where we are gathered, and that this is the first function which has taken place in the Bland-Sutton Institute of Pathology, which, with its laboratory, lecture theatre, and museum, will always be a monument to Sir John Bland-Sutton's princely munificence, to his affection for the hospital and medical school, to his devotion to science, and to his belief in her power to relieve suffering humanity. And who will dare attempt to gauge the direct and indirect influence of this institute? Sir John's catholicity is well known, and I feel assured of his sympathy when I venture to hope that psychiatry, which is the branch of medicine in which my interests are specially centred, will have its fair share of the blessings that doubtless will be showered from this institute.

The pleasure of our gathering is, however, marred in one particular, for we have to lament the absence of His Serene Highness, Prince Alexander of Teck, whose active interest in all that pertains to the welfare of the hospital and medical school is so deeply appreciated, and whose presence we should have enjoyed to-day were it not that his military duties have made it impossible.

Few academic sessions can ever have opened amidst such momentous events as does the present one; and whatever diffidence I felt in accepting the responsibility of this year's address has not been diminished by the fact that I am conscious there are other members of the school's staff who would in all likelihood have chosen a theme more in consonance with the stirring events with which our thoughts are thrilled: indeed, realising that such a course would probably prove the more acceptable, I did make an attempt to recast the draft of my remarks; but, not unmindful of Pliny's injunction to the cobbler and wishing to eschew anything like an "ultracrepidarian" reputation, I have harked back to my original purpose, which was to bring before your notice (A) the present position in which psychiatry stands; (B) the essential cause of this position; and (C) to endeavour to convince you that general hospitals—more particularly those to which medical schools are attached—can, if they choose, effect a material improvement therein.

(A)—PSYCHIATRY THE CINDERELLA OF MEDICINE.

Psychiatry, or by whatever other term you prefer to denote the study and treatment of mental diseases, has sometimes been characterised as the Cinderella of general medicine; that is to say, it has been alleged to be a branch (first) which, compared with other medical subjects, lacks sustaining interest, and (secondly) whose study is apt to side-track its devotees into blind alleys, where their scientific enthusiasm is chilled and their legitimate aspirations to maintain an honourable position for themselves are disappointed. Now while I can emphatically assert that any such description is a very one-sided one, and wholly untrue as respects the first part of the allegation, there is in its second part a modicum of truth, which has, I believe, barred the way to many a young medical man who would otherwise have maintained his initial interest in the subject both to its and his own advantage, and which therefore had better be clearly understood.

(a) *Wherein the Statement is not True.*

To refute the allegation that the study of psychiatry in any way lacks sustaining interest is not difficult. What student or medical man, possessed of his normal share of scientific inquisitiveness, has ever filled a resident post in an institution for the insane in which, affiliated to a medical school, teaching and research work go hand in hand with its administration, and has come away imbued with any such notion? I have never met him. On the contrary, if really necessary, it would be an easy task to demonstrate that the subject possesses an absorbing and, indeed, transcendent interest; that in its compass—not easy to define—its borders insensibly merge into those of other departments of general medicine; that in not a single medical or surgical case can the mental side of the patient be safely ignored; that the truth of this last fact—often forgotten—not infrequently comes home to the medical man in attendance with startling and unpleasant force; that without a sound knowledge of at least the elements of psychiatry such circumstances may cause him much embarrassment; and, lastly, that, to the medical man who is tempted to dive below the mere surface of the subject, there is a wealth of problems, each well deserving a life's devotion, whose non-solution impedes successful treatment, but whose elucidation may with confidence be expected to restore to a normal life many of those afflicted with the direst of human calamities, who, in the light, or rather the obscurity, of existing knowledge, are now too often doomed to premature death or life-long segregation from their friends. And, of still greater moment to the public, there is good ground for believing that, with the removal of some of the perplexities with which the subject is at present strewn, not only will many a man and woman be able to ward off the necessity of such segregation, but also will the path of many a one be rendered smooth where now, by reason of the traveller's neuropathic oddities and obsessions, it is thorny and often pursued only at a cost of much mental pain. The accomplishment of all this by no means spells a fresh goal. The problems which now await solution are, for the most part, fresh hill-points which have come into view when the summit of others has been attained by the indefatigable labours of certain of our predecessors and *confrères* in the specialty. That they have been all too few and often ill requited is true enough, but in their accumulated observations they have left a heritage which is a veritable treasure house. In no other branch of medicine is the harvest whiter than in psychiatry, and I fain would persuade some of you who are about to enter the medical profession to come in and gather it.

(b) *The Allegation True in Two Counts.*

Wherein then, you will ask, is psychiatry even remotely deserving to be dubbed a Cinderella? The epithet is deserved, I fear, as respects two counts: (1) The unpopularity of the asylum medical service; and (2) the manner in which psychiatry's claims are overlooked by philanthropists. Both are, in my opinion, dependent primarily on the same cause.

1. *The unpopularity of medical work in asylums.*—The first and probably most obvious count is the undeniable reluctance of young medical men and women either to enter the specialty at all, or, if they do join it, to do so with a view to applying themselves seriously to it as their life's work. Certain it is that at the present moment public asylums—even those most favourably situated—find it increasingly hard to obtain suitable candidates from which to fill vacancies in the junior ranks of their medical staffs; so acute has been the difficulty that, at a large asylum in a medical staff comprising a superintendent and six assistants, I have known as many as three of the latter positions filled at the same time by locum-tenents—in other words, by men between whom and the institution the link is so small that it can be severed at a week's notice. No one will deny that such a position of affairs is a menace to the present and future welfare of any such institution; it is highly desirable that it should be realised by the public in whose hands, mainly through their municipal representatives, the remedy largely lies.

(*i.*) *Causes of this unpopularity.*—The task of exposing and grappling with the difficulty has within the last three years been undertaken by a committee of the Medico-Psychological Association, and is set forth in an admirable and comprehensive report which will be found in this month's number of the *Journal of Mental Science*. This report is all the more weighty, and should the more recommend itself to the public, by reason of the fact that nowhere are the interests of the patients subordinated to those of the medical men; and because, with the pecuniary advancements claimed for some of the latter, there is *pari passu* a demand for increased opportunities for adequate initial training and future study and research. The subject is also dealt with at some length in the Sixty-eighth Report (pp. 40, 41) of the Commissioners in Lunacy, which was published this year. No doubt the paucity of applications for these by no means unimportant and not ill-paid asylum posts is to some extent due to the large increase in the number of available public health appointments (whether as medical officers of health, school medical officers, or tuberculosis officers), to the passing of the Insurance Act, and to the improvements effected in the medical departments of the Royal Navy and the Army.

But the difficulty is of too long standing to be explained by those three factors, though it is they, doubtless, that have rendered it acute; otherwise it might be left to right itself on the principle of supply and demand. Nor, while refraining from any expression of opinion as to the merits or demerits of the suggestion that public asylums (which are at present managed by local authorities) should all be linked up to form one common service, do I believe that the adoption of that policy would of necessity render asylum work more popular as a career for medical men.

The crux of the situation lies in the fact that with the gradual increase in the number of medical appointments in the specialty, consequent upon the steady growth in the number of public asylums, the proportion, which the number of posts justly regarded as "plums"—as offering an assured, independent, and satisfactorily remunerated position—bears to the number of subordinate and hitherto far from assured positions, has unfortunately become less and less. Time was when most public asylums were small institutions, medically staffed by a superintendent and one assistant: the latter's status was comparable to that of a house physician; quite equitably only bachelor's quarters were provided for him; he was looked upon as a bird of passage and as such regarded himself. Additions have, however, been made so persistently to asylums that now, out of the 97 existing county and borough asylums in England and Wales—providing between them more than 300 medical posts—no less than 40 contain over 1000 patients, and of these in about 14 the number is more than 2000, while only 16 contain less than 500 patients. Manifestly, with such a great augmentation in the size of asylums, the number of medical officers who, for the safety of the institution, must be regarded as permanent officials has largely increased, but in the meanwhile custom has—I venture to suggest, needlessly and unwisely—decreed that the position of those officials should remain much as it was when asylums were small units; so that, while in former days 50 per cent. of asylum medical appointments were coveted and assured positions, the same can now be said of scarcely 30 per cent. In other words, the junior's aphorism that "the assistant medical officer of to-day is the superintendent of to-morrow" is lamentably untrue. Were it always a fact, the present shortage in applicants would never have arisen; but to express the truth we must paraphrase and say rather that the "superintendent of to-day is the assistant medical officer of yesterday"; and, indeed, the briefest consideration of the expectation of life suffices to demonstrate that unless men are seldom appointed to the position of superintendent until they are well past the prime of life—a policy not to be recommended—only a limited number of assistants can count on attaining to that position.

(*ii.*) *To overcome the unpopularity.*—But if I have hitherto painted to you the darker side of asylum service, I am entitled to show you its brighter aspect; and it has one. In the first place, the disabilities of the service, some of which I have indicated, are recognised and admitted as evils. That is a great step, and it is gratifying to add that, not only have several local authorities substantially mitigated them by granting (*a*) *increases in salaries and the provision of separate houses for assistant medical officers*, lending hope to our being within measurable distance of seeing the principle accepted that no resident male official in our asylums, whose services it is desired in the interests of the institution to retain over a series of years, shall be debarred either from marriage or from other social advantages, including a reasonable independence of position; but also a healthy spirit has arisen calling for evidence of greater scientific training in the specialty on the part of those practising in it, as witnessed by (β) *The institution of diplomas in psychiatry* by the Universities of Durham, Edinburgh, Manchester, Leeds, and Cambridge (enumerated in the order in which they adopted this step); besides which mention may be made of the fact that in London and at the four Scottish Universities psychiatry is now a branch in which the degree of Doctor in Medicine may be obtained. The institution of these diplomas is a recognition of a movement of probably far-reaching importance, and it is not an exaggeration to say that it marks an epoch in the progress of psychiatry. That they will become registrable by the General Medical Council is a further step that I venture to hope will not be long delayed. Some of you are conversant with the beneficial effects upon the sanitary service of the country which followed upon the enactment of the compulsory holding of diplomas in public health; and many of us believe that similar benefits would flow from a like policy in the case of the diplomas in psychiatry; not, of course, that it is in the mere possession of diplomas that their potency resides, but rather in the knowledge and systematic study of which they are the hall mark. The existence of these diplomas has already emphasised the pressing need for (γ) *the establishment of psychiatric clinics.* The fact that one, to which I shall have occasion again to refer, will shortly be at work in the metropolis under the ægis of the London County Council is a matter for earnest congratulation; and not less satisfactory is the recent erection at Cambridge of laboratories for the prosecution of experimental psychology. May the time rapidly come when these institutions will no longer stand out as oases, when none of our medical schools but is in possession of both of them, and when none of our towns of any magnitude is lacking the former. The evolution of these clinics is one of the directions towards which it is of paramount importance to secure not only the sympathy but also the active intervention of general hospitals. Such clinics would enable the study of the various branches of psychiatry and psychology to be coördinated into a well articulated scheme, embracing ante- as well as post-graduate study; and would be the means of securing, as is so much to be desired, (δ) *a more satisfactory position for psychiatry in the medical curriculum.* Few if any teachers in psychiatry can be satisfied with the position that their subject occupies in the medical curriculum. The compulsory attendance on four-fifths of 12 systematic lectures in the school and 12 clinical demonstrations at a recognised institution for the insane is what is usually demanded of the medical student. The subject enjoys the distinction—some will say an enviable one, and there is much to be said for their contention—of being the only compulsory one in which (as respects by far the majority of qualifying examinations) the student is not examined. Far be it from me to advocate yet another addition to the student's trials by examination, nor have I sufficient experience as an examiner to enter into the controversy of written examinations *versus* credit for work done in the class as ultimate tests of the candidate's fitness to practise his profession—*in medio tutissimus ibis* will, I suspect, be the solution. But it does seem to me anomalous that of all courses which the student is called on to attend he is exempt from any proof of competent knowledge in the one with which the liberty of the subject is so intimately involved. Either the certificates of attendance on the course (which is now compulsory) should include satisfactory evidence of knowledge attained and work done, as well as mere attendances, or the final examination in medicine, both written and clinical, should always include a test as to the candidate's knowledge of mental diseases.

Adverting for a moment to the nature of this course—of all subjects, the teaching of mental diseases is one which lends itself rather to clinical methods than to systematic lectures; and freedom should be given to the teacher to proportion the time between the methods according to circumstances. But that privilege would go only a small way towards adequate reform; for as matters now and would still stand, the clinical demonstrations necessarily all take place in institutions removed from the medical school—commonly at a considerable distance, though sometimes, it is true, comparatively near at hand. In either event the student sees only certified cases of insanity, and for the most part cases in which the stage of the malady is considerably advanced. He learns something of the classification of mental diseases, of the diagnosis of the forms as they are presented to him in the asylum and of their treatment, and is instructed in the mode of filling in certificates of mental unsoundness. This is all to the good, and I should strongly deprecate the abandonment of asylum clinical demonstrations. But what he almost wholly misses is an opportunity of seeing those borderland and incipient cases, with the difficult technique of whose examination he should have, if not a familiarity, at least an acquaintance—that is, if he is to be competent to render that spiritual aid which, without encroaching on the province of the priest, is more and more expected of medical men; for they it is, as said the Dean of St. Paul's at the last International Medical Congress, who now hear the confessions of anxious and conscience-stricken patients. If it is pardonable to glance at the commercial aspect of the question, I have no hesitation in saying that on ability or inability to deal with these cases will often depend the retention of a family in the doctor's general practice. Moreover, under existing arrangements, the student's access to cases of mental disorder is usually limited to a weekly visit, whereas it cannot be denied that of all branches of clinical medicine the student of mental disease should have, under proper supervision, free and daily access to a mental ward and mental out-patient department.

For the realisation of these aspirations I would again repeat that we must enlist the interest and energetic coöperation of general hospitals, and in this direction I need hardly say that, to my mind, the establishment at Middlesex Hospital of a special department for nervous diseases was a very bright omen, even limited as it at present is to out-patients, though the addition of beds to it would, I am sure, materially add to its sphere of usefulness.

(iii.)—Advice to entrants into asylum service.—Before quitting the subject of the present unpopularity of asylum service I should like to express, firstly, my conviction that, with the recognition that has already taken place of some of the existing drawbacks, the neck of the difficulty has been broken; and, secondly, and speaking with a full sense of responsibility, my hope that, despite any warnings he may have heard, no student of this school who is willing to work hard and apply himself seriously to the study of psychiatry as a branch in which to specialise will be deterred from following his bent. If I may be permitted to offer

a word of counsel I would, however, advise him to be cautious in his method of procedure, and especially not to let considerations of £ *s. d.*—important though they may be—be the only nexus between himself and his choice of place. After serving the usual term as house physician or surgeon he would be well advised to endeavour to attach himself to an asylum affiliated to a medical school, whence, after an adequate period of study and training and after making sure he has attended all the courses obligatory for one of the diplomas in psychiatry, he can migrate to other institutions which, though perhaps less favourably situated, offer advantages in salary and promotion. No such aspirant for reputation in psychiatry need, I am convinced, fear being side-tracked and, even if he does not ultimately reach the position of superintendent—and not every military officer becomes a general nor every naval officer an admiral or even a captain—he will be able to present claims to an honourable and assured position which cannot be disregarded.

2. *Psychiatry's claims overlooked by philanthropists.*—Though the pecuniary recompense paid to the actual toilers after knowledge is too often slender and in the nature of a pittance the progress of science, nevertheless, owes much to the liberality of wealthy benefactors. To criticise the direction of their benevolence would be a sorry and ungrateful act. Rather, did time permit, would I enumerate all the endowments that have been made in recent years to the various departments of medical research. Such a catalogue, while redounding to the credit of the donors, would serve my purpose by emphasising a patent hiatus that most assuredly deserves to be filled in. For at any rate during the 20 years during which I have been connected with the specialty, with one exception, conspicuous by its solitariness as well as by its munificence and far-sighted policy—I refer to the Maudsley Hospital in course of erection—I cannot call to mind any donations or legacies which have had for their object the endowment of psychiatric research in this country.

This is the second count in which, I suggest, psychiatry is indeed and undeservedly the Cinderella of medicine. By no manner of means can this cold shoulder which she receives be explained by any lack of problems of interest; indeed, nothing would be more congenial than to be called upon to give an address entitled, "Things we should Like to Know in Psychiatry," to an audience of millionaires anxious for some guidance in the distribution of a moiety of their wealth; nor would it be difficult to supplement the list of problems with chapter and verse of the immediate benefits that might be expected to flow from their answers. It is to be doubted, however, if such a campaign, even though entrusted to a master in oratory, would be as moving as knowledge gathered by personal observation—who sees with the eye, believes with the heart, and there is no little sagacity in the dictum that "you cannot convert a man unless you persuade him he is obeying the dictates of his own heart."

For that and other reasons it is a misfortune that so slender a proportion of ratepayers, particularly of their *intelligenzia*, ever visit and make themselves personally acquainted with the 97 asylums which their money provides and in which are maintained some 105,000 patients. Many of these institutions are situated in country districts away from the throb of active life, and, except for the visits they receive from official visitors and from the friends of a proportion (often too small) of the patients, they are left severely alone—verily, out of sight out of mind. And what would the intelligent ratepayer learn? Speaking generally, he would be amply satisfied with all he saw, and that his money was being economically and humanely spent. Here and there he would be impressed by centres of serious effort to unravel, with an energy deserving of the highest praise, the perplexities which surround the cause and treatment of mental affections. His interest aroused, as it inevitably would be, particularly if it were backed by some knowledge of the intensive methods of research and their cost in other branches of medical science, he would begin to inquire into what relation the sums spent on psychiatric research bear to the cost of the patient's maintenance. He would probably be a little staggered to learn that the latter (not even including the cost of repairs to fabric and other capital charges) is well over two and three-quarter million pounds a year; but with what derision and almost incredulity would he hear that, at a liberal estimate, it would be hard to show that even so insignificant a fraction as 0·2 per cent. of this sum is spent in organised scientific research?

It is, however, a fact of much significance and one very pleasing to chronicle, that quite lately the Government has set apart, to be distributed by the Board of Control, the sum of £1500 to be spent in each year in the encouragement of the investigation of mental defect in the broadest sense of that expression—thereby setting the imprimatur of the State upon the claims of psychiatry. This recognition and the advent of the Maudsley Hospital are bright streaks which, it is to be hoped, herald the dawn of a brighter day for Medicine's Cinderella.

B.—CAUSE OF PRESENT POSITION OF PSYCHIATRY.

The essential cause of the present position of psychiatry has its roots in the past and is undoubtedly the divorce that has been decreed between it and other departments of medicine. This is due to the prevailing custom, not only of treating the majority of cases of mental disorder in institutions devoted solely to that end, but also of refusing to admit such cases to general hospitals. This custom is not new, for we have records of the existence, as far back as the year 1400, for example, of a small establishment at Charing Cross and another at Barking for at least the segregating, if not the treatment, of a few insane persons; and it probably owes its origin to the failure to realise that many morbid mental symptoms are due to the same pathological conditions as are the symptoms of other systemic diseases. That "a precedent embalms a principle" has surely been exemplified here, and nowhere, I should imagine, with more disastrous results; more particularly has the custom retarded progress in the case of those areas which have the good fortune to possess within them a university—with which intimate coördination of research workers, in lieu of the mischievous and wasteful system of segregation, could have been sought.

It cannot, I admit, be gainsaid that at least superficially there are serious differences between cases of mental disorder and cases ordinarily regarded as eligible for admission to the wards of a general hospital. Though each of these differences presents difficulties of its own, I cannot agree either that any one of them ought to be allowed to be a ban on the patient's entrance into a general hospital, or even that all of them in conjunction constitute any insuperable obstacle. On the contrary, I urge that the time has come when they should cease to be permitted to encompass a gulf, almost indeed as "profound as that Serbonian bog," which has so long separated the treatment of mental from other forms of disorder.

C.—WHEREIN CAN GENERAL HOSPITALS BENEFIT PSYCHIATRY?

General hospitals can benefit psychiatry by bridging over the gulf to which I have just alluded; and this, I submit, could be effected by the establishment in general hospitals of mental wards with corresponding out-patient departments. In the case of hospitals in association with medical schools they would naturally assume the form of full psychiatric clinics.

Specialism in General Hospitals.

Specialism in general hospitals has most assuredly come to stay, and though some deprecate its triumph they may at least take comfort from the fact that in its birth it was the twin of the inevitable complexity born of the progress made by medical science. The tendency to build special and independent hospitals for this and that disorder seems, and I think happily, to be on the wane. This has been effected by the response made by general hospitals to the demands of specialism; and now many a large hospital strives to have under its own roof departments for all the specialties that have arisen—wards for diseases of the eye, of the nose and throat, of the ear, of the skin, for nervous diseases, for genito-urinary diseases, for cancer, children's wards, maternity wards, and a dental department. But the gamut is incomplete, for if there is one department that, willy-nilly, has been dubbed a specialty it is psychiatry. Yet in our own country, so far as I am aware, not a single general hospital can boast a psychiatric clinic in the full sense of the term.

The debt that the public owes to general hospitals and to their medical staffs, who gratuitously and so lavishly give their time, would indeed be hard to compute. It sits lightly on the shoulders of most of those who use those institutions because they are ignorant of the work that goes on within their walls; they regard the cure of their malady as an empirical procedure. It is only the more enlightened that have any glimmering of the fact that each case is a new problem; that its history, course, and result are laboriously recorded, and are subsequently not pigeon-holed as dust collectors, but classified to form a living library for reference in future cases.

Consciousness of this debt and desire not to be presumptuous make one hesitate in any way to criticise; but, if I may be forgiven using a somewhat hackneyed quotation, I will take leave to say to general hospitals, and to throw into my question a spice of reproach, "Canst *thou* not minister to a mind diseased?" I am convinced they can if they will.

The Pyschiatric Clinic.

Mental wards in general hospitals are not an entirely modern conception. There may have been other examples; but it is certain that in the year 1724, when Guy's Hospital was established, its founder stipulated that insane persons discharged from certain other general hospitals were to be received; and in 1797 a special "house" in connexion with the hospital was built which continued to receive insane patients down to the year 1859. That it was not a success, and that, down to its abolition, the then Commissioners in Lunacy pressed for its removal into the country, are facts which have sometimes been put forward as evidence against the soundness of the principle. But the further fact should be noted that it was expressly stated that the 20 cases, which this mental ward was to accommodate, were to be all certified as incurable; and it is indisputable, from the ward's annual returns, that it was not uncommon for a year to pass without any admissions, that discharges were few, and that apparently none were recorded as having recovered—surely the negation and antithesis of our conception of a psychiatric clinic.

The ideal Psychiatric Clinic has probably yet to be developed, and each new one should mark in its design progress in method of treatment. As regards this country it has as its prototype the admirable admission hospital which now exists as a detached unit in several of the county asylums. While brains are more important than bricks, no little cunning is nevertheless requisite in the actual design of the building; for, besides adequate out-patient rooms, it internally has to provide accommodation for every type of mental case, so arranged that no patient need be disturbed, alarmed, or suffer any shock by the behaviour of a fellow patient; and withal, as much of the treatment in bed as possible should be capable of being in the open air. There must, moreover, be means of classifying the patients according to the stages they attain towards convalescence. Opportunity should be provided on a liberal scale of employing every known special form of treatment which experience teaches promotes mental recovery. Properly equipped clinical rooms for examination of patients on admission and afterwards are essential. Rooms adaptable for work in practical psychology should be included, and a certain amount of laboratory space would also be needful; but as to the latter, the situation of the clinic, within the curtilage of a general hospital, would enable advantage to be taken of existing laboratories.

That such an institute could prove a failure is as inconceivable as inestimable would be its benefits.

Out-patient departments.—As ancillary adjuncts to the wards, mental out-patient departments would, of course, be a necessity, and of their power to stave off many a threatened mental breakdown I have not the shadow of a doubt. In the general hospitals attached to a few medical schools (among which is Middlesex Hospital) and in at least one public asylum they already exist; but I can see no reason why they should not be established in connexion with every general hospital in the country, nor why the expert knowledge of the medical officers of institutions for the insane should not be freely available and made use of—that they would be readily given there need, I am sure, be no misgiving. Such out-patient departments, if they are to fulfil all the functions I have in view, should be attached to the general hospitals and not to the asylums.

Mitigating the stigma of insanity.—Owing to much misunderstanding, both as to the liability to relapse and on the question of the influence of heredity, a most unfortunate stigma attaches to a person known to have had a mental breakdown, especially if the case has been placed under legal certificates. Whilst wholly undeserved in a large proportion of cases, how real it is in the view of the public and how powerfully it operates as a deterrent to prompt and efficacious treatment, only those of us who see these cases fully appreciate. No amount of preaching will stifle this sentiment; but the institution in general hospitals of the psychiatric unit, access to which could be obtained through the ordinary portals of the hospital, would be the most powerful factor possible in nullifying its evil influence.

Teaching facilities.—Upon the advantage that would accrue to the students and to post-graduate study and research I have already dwelt. Our students, by daily observation, would be enabled to familiarise themselves with cases not crystallised but in plastic and incipient stages—the very forms that they will meet in general practice.

Opportunity would also be given to the general nursing staff in turn of becoming acquainted with mental nursing—to the advantage of both branches of nursing.

Legal restrictions have sometimes been advanced as reasons against the possibility of use being made of general hospitals for that purpose. Speaking quite unofficially (as I am throughout this address), I would merely say that I believe that the legal difficulties have been exaggerated, and I do not think they would operate to prevent the establishment of psychiatric clinics. It is true that to utilise the latter to their full extent some amendments in the present law would be needed, and there is good reason to hope that ere very long these will be obtained, and that among other facilities they may render possible the coöperation between asylum local authorities and the governing bodies of general hospitals.

CONCLUDING REMARKS.

My task is done. If this address has consisted only of commonplaces, each useless perhaps by itself, my object has been to bring them to a focus, to place somewhat more in the limelight the claims of psychiatry, and to put forward a plea for a wider sympathy with its needs. If peradventure one be found here whose attention has been engaged by any of my remarks, I beg him not to be satisfied with taking for granted what I have said, but to look into the question for himself; I have confidence that his interest, once aroused, will not flag, but will bear fruit. As to the part in the problem I hope some day to see general hospitals play, if not presumptuous, I would venture earnestly to ask the authorities of this hospital to consider the feasibility of adding to their units a psychiatric clinic. Has it not been the steadfast determination of the Middlesex Hospital to provide the fullest opportunities for teaching, study, and research in every branch of medical science, not only as respects the preliminary and intermediate subjects, but also on its clinical side? If I have dared to suggest that a gap exists in the latter, it is one that, as far as I am aware, is common to all other general hospitals in this country, and if the Middlesex Hospital resolved to lead the way in filling it in or bridging it over its action would surely be no departure from its considered policy, but rather the fulfilment of its highest and best traditions.

INCONTINENCE OF URINE IN WOMEN.

BY DAVID NEWMAN, M.D. GLASG., F.R.F.P.S. GLASG.,
SURGEON TO THE GLASGOW ROYAL INFIRMARY.

As observed clinically, cases of incontinence of urine in women may be divided etiologically into four classes: those in which the incontinence is secondary to some vesical lesion, such as cystitis, calculus, or tumour; those in which it is due to a bacillus coli infection of the bladder associated with localised hyperæmia around the neck and in the lower part of the trigone; those in which there has been some injury to the neck of the bladder or to the urethra; and those where no history of traumatism can be discovered and no lesion can be found on physical examination. Incontinence arising in the course of vesical disease or from bacillus coli infection will not be included in our present inquiry; attention will be limited to conditions involving injury to the neck of the bladder and urethra, and to those cases in which local examination reveals nothing to the eye.

Some kind of injury, obstetrical or surgical, is by far the most common cause of incontinence in women. In those who have borne children, especially multiparæ, the neck of the bladder or the urethra is liable to suffer injury to the muscular tissues, the structures which control the discharge of urine. During parturition the sphincter of the bladder is exposed to injury and the structures of the urethra may be overstretched; or by the introduction of large surgical instruments, and especially by that most unsurgical procedure digital examination of the bladder, the urethra and neck of the bladder may be so seriously injured that control of the escape of urine is lost. Doubtless the female urethra may be dilated either with the finger, with forceps, or with a full-sized urethral speculum, while the patient is under an anæsthetic, without producing much harm. Even after considerable dilatation rapid recovery may occur, but there are not a few cases where undue dilatation of the urethra and neck of the bladder leads to what has been regarded as insuperable incontinence of urine and never-ceasing annoyance to the patient. It is the purpose of this article to show how these cases can be improved or cured by operation.

On standing or on sudden exertion urine escapes. This is very distressing to the patient, and prevents her from associating with her friends or going about with any freedom. The escape, whether it be continuous or intermittent, is always beyond control, and necessitates wearing of gauze pads, which require to be perpetually changed if irritation from the discharge is to be avoided. Even with the most careful precautions considerable suffering may be induced by excoriation of the external genitals; the odour becomes offensive, the knowledge of the condition of matters prevents the woman from going into society, and her life becomes in every way miserable.

In these cases the mucous membrane and muscular walls of the bladder are usually healthy; the structures of the neck alone have been injured. There is no serious degeneration of the tissues, the nerve supply is good and efficient, and the condition may be cured by operation.[1]

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[1] In an article illustrating certain urinary conditions in women associated with frequent or painful micturition (Glasgow Medical Journal, May, 1913) the writer mentioned an operation he employed for such cases, but did not describe it in detail. The object was to unite the fibres of the sphincter at the neck of the bladder and narrow the urethral canal throughout its course. The object of the operation about to be described will be seen to be different.

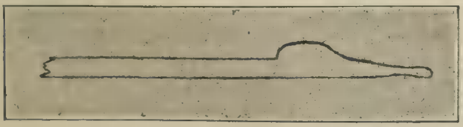
In the second class of cases, those in which no disease or traumatism can be discovered, the patient seems to be reduced to the state of the infant who passes urine unawares, and as if the control of the will was in abeyance. The will has no power to control. Much the same condition is seen in nocturnal incontinence in young girls; in these, however, the incontinence is during sleep or just at the time of awaking.

The incontinence may begin in various ways. Generally the development of the ailment is slow. A small quantity of urine escapes almost unknown to the patient except for the wetting of the garments. Gradually the accident becomes more frequent, and larger quantities of urine escape from time to time. No importance or significance is attached to the condition, it may be many weeks or months, but as matters grow steadily worse the patient and her friends become distressed and alarmed as to the future, especially as medicinal treatment produces little or no improvement. Ultimately complete incontinence becomes established with all its evil effects, both mental and physical. It is one of the most distressing and intolerable of the minor maladies to which females are subject, and the more so as seldom a cure by operation is attempted. The case is simply allowed to drift because a belief has been accepted by many surgeons that little or nothing can be done.

It is outside of the scope of this article to give an account of or to criticise the many methods which have been adopted from time to time to cure incontinence in women, the object being only to describe an operation which the writer has found to be successful in a considerable number of cases during the last 15 years. He first used it in 1899. In almost all the cases the incontinence was of old standing, so that the muscular elements of the sphincter were wasted and incompetent. Consequently the object of the operation was not to restore the sphincter action, an end no doubt desirable, though unfortunately not attainable, but rather to offer simply a mechanical obstruction to the too easy escape of urine. The operation was therefore directed to diminishing the lumen of the first three-quarters of an inch of the urethra, and at the same time constructing a firm mound of mucous membrane on the floor of the bladder just inside the neck—to imitate, as it were, the obstruction seen in enlargement of the middle lobe of the prostate in the male.

The patient may be placed either in the lithotomy or in the elbow-knee position. In the following description we will adopt the former; the pelvis is well elevated, the knees widely apart, and the posterior wall of the vagina fully depressed, so as to expose the anterior wall fully to view. The bladder is distended with 12 ounces of boric solution. A straight steel bougie, No. 14, with a knob of the size and shape of a horse-bean half an inch from its point (Fig. 1), is introduced into the bladder, at first fully and then partly withdrawn, so that the knob comes down to and locates the neck, and by elevating the handle of the bougie the knob is made to throw out the posterior wall of the bladder immediately above the sphincter, and so project it backwards and downwards. Three sutures, one anterior and two lateral, are now passed through the lips of the os, and the uterus is dragged downwards so as to give a clear view of the anterior wall of the vagina.

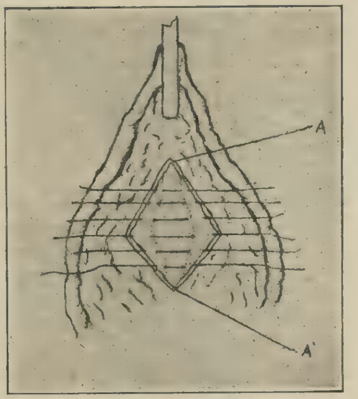
FIG. 1.



Bougie for introduction into bladder.

A median vertical incision is now made from the uppermost point of the knob of the bougie downwards over the knob and along the middle of the stem for a distance of one and a half to two inches. With blunt-pointed scissors cutting on the flat the mucous membrane and muscular coat of the vagina are carefully separated on both sides of the median incision. The dissection should be made right down to the submucous tissue of the bladder and urethra, but great care must be taken not to expose the vesical mucous membrane itself. The vaginal mucous membrane is removed over a lozenge-shaped area (Fig. 2, A A′), the centre of which corresponds with the position of the most prominent part of the knob of the bougie; the upper angle is just over the point of the instrument. The lower angle corresponds with the stem, while the two other angles point outwards, one on either side. Incisions are now made to join the apices, and a lozenge-shaped portion of vaginal mucous membrane is removed, exposing a corresponding area of raw surface, the floor of which covers the neck of the bladder and the first half inch of the urethra.

FIG. 2.

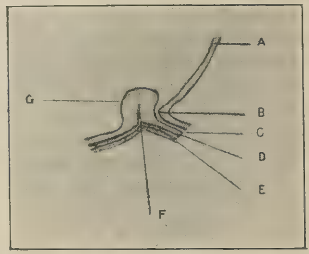


To show method of passing sutures.

The vesico-vaginal septum having had the vaginal stratum removed over the area mentioned, the next step of the operation consists in building up a dam to prevent the too easy escape of urine. The successful construction of this mechanical obstruction depends upon heaping up a bank of mucous membrane on the vesical side of the septum and supporting it by tightening the structures behind—those on the vaginal side. (Fig. 3.) Make the first redundant, the second scant. The raw surface exposed is about one and a half inches in length from above downwards, and from side to side three-quarters of an inch. The broadest part of the lozenge is over the neck of the bladder.

The next stage of the operation is the suturing. The bougie is still in position. The sutures are chromic catgut and are introduced as follows. (Fig. 2.) A deep row is planted as shown in the illustration. On the left lip of the wound the needle is passed from left to right; it enters immediately under the vaginal mucous membrane to come out one-eighth of an inch to the left side of the centre line of the bougie; it is then carried over the rawed surface to one-eighth of an inch beyond the right side of the bougie, where it penetrates the tissue, to be brought out on the right lip of the wound. Six sutures are passed in this way as shown in Fig. 2. The bougie is now withdrawn, and the sutures are tied, cut, and buried. A second row of fine gut sutures is applied to unite the margins of the wound in the vaginal mucous membrane, and the operation is completed. No special after treatment is required, except that it is well to retain a small-sized rubber catheter for the first six or eight days, and to cleanse gently the parts twice daily.

FIG. 3.



A, Bladder wall. B, Neck of bladder. C, Urethra. D, Posterior wall of urethra. E, Vaginal wall. F, Cut surfaces sutured. G, Mound of mucous membrane.

The most common causes of simple incontinence of urine in women—that is to say, loss of control unassociated with disease of the bladder or the urethra—are injury received during parturition and over-distension of the urethra and neck of the bladder by instruments. As a result of these injuries a secondary cystitis or urethritis may be set up which aggravates the suffering considerably. There are other cases where no history of traumatism can be discovered. The former are more amenable to surgical treatment than the latter, but even these may be much improved by the operation suggested above.

Glasgow.

MULTIPLE ROUND-CELLED SARCOMA ORIGINATING IN THE NARES.

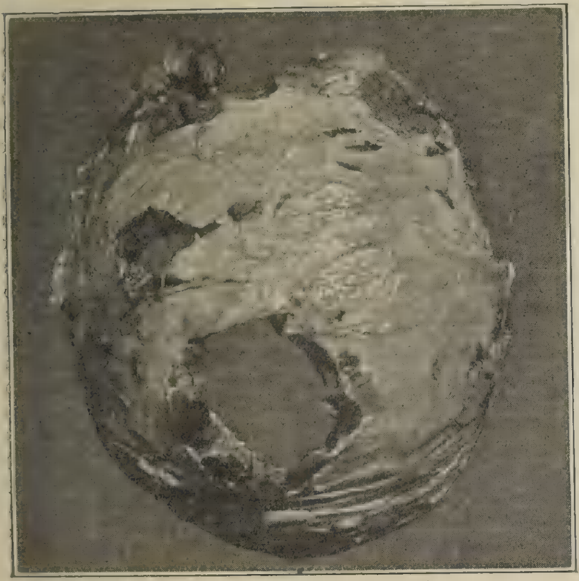
BY C. N. SLANEY, M.R.C.S. ENG., L.R.C.P. LOND.,
DEPUTY MEDICAL OFFICER H.M. PRISON, PARKHURST.

A MAN, aged 43 years, was brought under notice in February, 1912, complaining of being unable to breathe properly through the nose on account of it being stopped up more or less in both nostrils. This condition gave rise to continual sore-throat, cough, and general discomfort, in consequence of the patient having to go about with his mouth open. He stated that he had been told by a medical man whom he had consulted in the matter that he suffered from a polypus in the nose, and also that he had received treatment for this condition during the year 1909, when the growth was removed, and that it had again recurred. He was a heavy, thick-set man, 5 ft. 7 in. in height, and weighing 168 lb.; of pale complexion, but apparently in robust health; a woolcomber by trade. He expressed the wish that the polypus should again be removed in order to relieve him from his discomfort. A history of syphilis and gonorrhœa was elicited; but apart from these two diseases, which had apparently never worried him very much, he had enjoyed excellent health.

On examination there was found a fleshy, movable, pedunculated growth about the size of a large walnut, reddish-purple in colour, occupying the nasopharynx and extending, as far as could be ascertained, from the upper part of the posterior nares downwards behind the soft palate. It was situated more to the right side than the left, and could be pushed by the finger upwards and forwards towards the right nostril, being moulded to adapt itself to its surroundings, and ending in a blunt point at its posterior free end. Viewed through the right nostril, which it tended to obliterate, it presented a soft, œdematous, glistening appearance. There were in addition one or two small nasal polypi of the ordinary pale gelatinous type present in both nostrils, and a thin, clear, inoffensive watery discharge, very slight in amount, was noted. On account of the general œdematous condition of the mucosa covering the surrounding tissues the exact origin of the fleshy mass, although it appeared to occupy the right side of the nose for the most part, could not be accurately determined. In response to his request that something should be done to give him relief as much of the growth as could be seen and felt was removed by the wire snare under local anæsthesia. The tumour was very friable and not easy to manipulate; comparatively little hæmorrhage occurred during the operation. As a result of this he was again able to breathe through the nose, the throat and chest troubles vanished, and he could sleep in comfort.

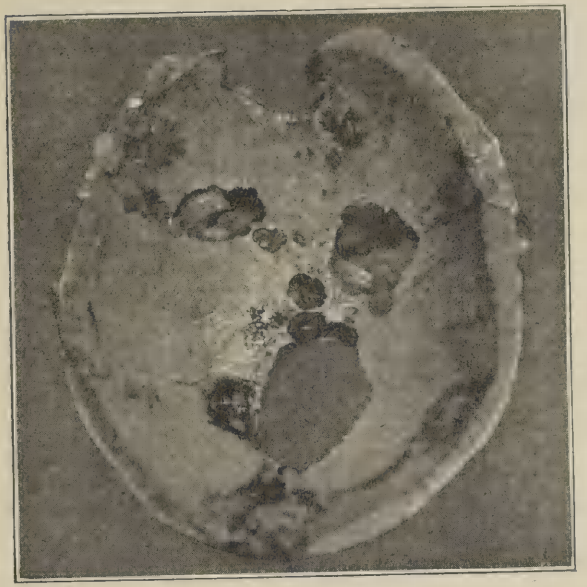
The patient again presented himself in January, 1913, having apparently enjoyed good health in the interval, complaining of pains in both knees and in the left shoulder, which he attributed to rheumatism. There was œdema of both feet, and the right side of the nose was found to be obstructed by new growth. The urine was acid in reaction, clear, and normal in colour, with a specific gravity of 1014, and it contained a minute trace of albumin. Under general treatment he improved in health and was able to get about. There was little or no alteration in his general appearance to be made out, but towards the end of March of the same year a soft fluctuating swelling, gradually increasing in size, made its appearance under the scalp in the middle line over the upper part of the frontal bone. This was quite painless and so insidious in character that for a considerable time he appeared unconscious of its presence. A few weeks later there followed another swelling, similar in character to that over the frontal bone, in the neighbourhood of the inner canthus of the right eye. Albumin in the urine, at first very slight in amount, gradually increased in quantity, the addition of a few drops of hydrochloric acid causing a white precipitate. Although he was ordered to bed, it was found expedient, as he was heavy and difficult to nurse, to humour him as much as possible, and he was allowed to get up at such times throughout the day as he deemed compulsory. On August 1st, 1913, he suddenly fell down whilst standing by the side of the bed. In all probability this fall was occasioned by the breaking of one or more of the long bones of the leg; but whether this was so or not it was found on examination that he had sustained a fracture of the right femur apparently just above the condyles, and also of the left tibia and fibula through the lower third; of the right radius and ulna at about the middle of the shafts, and another fracture in the region of the left elbow joint. The condition of the bones at the site of injury was consistent with the presence of new growth within them. The accident did not give rise to any shock. Under suitable treatment the fractured bones tended to heal satisfactorily as far as the position of the limbs was concerned, but the union was not very firm. Other tumours, similar in character to the one which made its appearance in the frontal region, gradually appeared under the scalp, in the proximal phalanges of the fingers, and on the right instep, that at the inner margin of the right orbit, as it increased in size, causing downward and outward displacement of the eyeball, giving rise to diplopia. As time went on, towards the end of the year, he complained of severe headaches, and attacks of nose-bleeding were not uncommon. It was estimated by the nurse that on one occasion he lost 16 oz. of blood from the nose during the night. The temperature at all times was irregular, running between 96·8° F. in the morning and 101° in the evening. His appetite remained good, and if anything he increased in weight. All tumours were slowly increasing in size, and he was quite unable to breathe through the nose, as a result of which symptoms of bronchitis made their appearance. On Jan. 22nd, 1914, in spite of the cheery optimism which never deserted him, it became obvious to those in attendance that dissolution was imminent, dyspnœa was very marked, and only with great difficulty was he able to draw air into the lungs, the act of inspiration being accompanied by a low, wheezy, hollow sound. The temperature rose to 104°, with slight morning remissions, the pulse-rate was 152, and four days later he succumbed in the early hours of the morning, conscious almost to the end.

FIG. 1.



Exterior view of vault of skull.

FIG. 2.



Interior view.

The report of the post-mortem examination describes the body as being that of a fat and well-developed man. Rigor mortis was still present. Many tumours of various sizes were visible to the eye—namely, under the scalp, one a short distance in front of the bregma, 4½ inches in diameter at its base; another in the right temporal region 1⅝ inches in diameter; and another at the top of the vertex in the middle line 2¾ inches in diameter; two projecting from the inner wall of the right orbit and displacing the eyeball; another in the right nasal fossa; on the right forearm and proximal phalanges of the right index and ring fingers; over the metacarpal bone of the left index finger and proximal phalanx of the middle finger; on the right ankle below and in front of the external malleolus; and on the left ankle above and in front of the external malleolus. There were signs of old fractures in the region of the left elbow, bones of the right forearm, the right femur, and the left tibia and fibula. A large fungating growth originating in the mucoperiosteum at the base of the skull was found occupying the nasopharynx and the upper part of the buccal portion of the pharynx, extending forwards into the nasal fossa more particularly on the right side, eroding the right lacrymal bone, the nasal process of the superior maxilla, and invading the inner margin of the orbit displacing the eye downwards and outwards. The growth was reddish purple in colour, soft and mucoid in consistency, and generally ill-defined where adherent to the bone. On opening the thorax the pericardium was found to be loaded with fat and to contain about half an ounce of clear straw-coloured fluid, the heart was enlarged, the muscle valves and orifices appeared healthy, but there were signs of commencing atheromatous degeneration in the aorta. Pleuritic adhesions were present binding the lungs to the chest wall and to the diaphragm, and there was evidence of bronchitis and emphysema. When opening up the trachea it was found that its lumen was partially occluded by a soft swelling invading the anterior two-thirds of the tube, more marked on either side than in front, lying beneath the mucous membrane and extending from the lower margin of the cricoid cartilage downwards to the level of the membrane between the first and second rings of the trachea; the swelling was seen to be pale in colour, soft in consistency, and to resemble in its general characteristics the new growths already observed. Externally the larynx and trachea appeared healthy.

The abdominal viscera, with the exception of the kidneys which were enlarged and congested, were to macroscopical examination apparently healthy; the mesentery was loaded with fat. On removing the scalp the outer table of the skull was found to be eroded by new growths. (Fig. 1.) The latter were of a dark maroon colour and jelly-like in consistency; they ranged from the size of a pea to at least three inches in diameter, the skull being literally riddled; there were 16 erosions of the outer table visible, all these being of fair size. The growths had apparently originated in the cancellous tissue of the bones and extended laterally between the external and internal tables of the skull, tending to thin them, and in some cases going through the bone. Dependent on the stage and direction of the growth, the tumours could be divided into three varieties—namely: (1) those growing between the two layers of the skull; (2) those eroding the outer table and invading the scalp; and (3) those growing inwards invading and infiltrating the dura mater, though not penetrating it nor affecting the brain tissue; these latter were situated for the most part in the middle line and tended to obstruct the lumen of the superior sagittal (longitudinal) sinus. (Fig. 2.) The brain and spinal cord exhibited no departures from the normal. The cavities of the long bones in the neighbourhood of the fractures were found to be occupied by growth similar to that found in the skull bones, the compact tissue being in places very thin or entirely absent, the surrounding tissues forming a capsule for the tumours. In the case of the femur there was a tendency to so-called expansion of the bone. The shafts of the affected phalanges, excepting for a few fine spicules of bone scattered over the surface of the growth, had disappeared, leaving only the articular ends of the bones. It will be seen that the metastases, with the exception of that found in the trachea, occurred, as far as could be ascertained, only in connexion with bony tissue. Microscopical examination, made some months previous to the appearance of secondary growths, of portions of the tumour removed from the nasopharynx and nostril, although at the time not absolutely conclusive, gave rise to grave suspicions as to malignancy.

Mr. L. Stanley Dudgeon, of St. Thomas's Hospital, who very kindly undertook the microscopical examination of the tumours, reported that the growth exhibited all the characteristics of a round-celled sarcoma.

Parkhurst.

Dr. Robert P. Dawson, J.P., who is a councillor of the borough of Newcastle-on-Tyne, has been selected as the new sheriff for the ensuing year.

DONATIONS AND BEQUESTS.—The late Mr. John Murray, of Dublin, has bequeathed nearly the whole of his personal estate, valued at £19,000, to the hospitals of Dublin in equal shares.—By the will of the late Mrs. Eliza Dixon, of Clifton Down, Bristol, the Middlesex Hospital will receive £1050 for a cancer bed in the new ward, to be called the "Thomas Dixon" bed, and £1050 for a cancer bed, to be called the "Eliza Dixon" bed.—The late Rev. William Ridge Greenhill has left £200 and one-third of his residuary estate to the National Hospital for the Paralysed and Epileptic, Queen-square, of which he was chaplain.—King Edward's Hospital Fund for London will receive £500 under the will of the late Mr. James B. Sharp, of Reigate.

A CASE OF MEDIASTINAL PLEURAL EFFUSION.

BY ALEXANDER ROSE, M.D. ABERD.

EXTENSIVE pleural effusion limited to the mediastinum is a rare disease. So far as I am aware the only text-book that gives a detailed description of mediastinal pleurisy is that of Dieulafoy. The following case shows very little resemblance to those recorded by him and is possibly unique.

The patient, who died suddenly five days after I saw him for the first time, was a thin, sallow-complexioned man, 52 years of age. He gave a history of gradually increasing weakness, wasting, and dyspnœa of at least 12 months' duration. He had never been a robust man, having been for many years subject to slight attacks of bronchitis, but during the past 29 years, which were spent in one situation, his longest absence from work on account of illness amounted to only three days. One of his children was said to have died in infancy from "consumption." About six weeks before his last illness his feet had been swollen for a few days, especially in the evenings. He complained principally of dyspnœa. There was no cough or expectoration. He preferred to lie on his back with the head raised, as the breathing became troublesome if he lay on either side. The pulse was 84 and feeble; respirations short, and varying from 24 to 30 per minute; temperature normal.

On examination of the chest it was found that the measurements of the two sides were equal. The right side was dull to percussion from the base to the third rib anteriorly, and from the base to the spine of the scapula posteriorly. The dulness was most marked at the base, gradually diminishing in intensity from below upwards. The apex was resonant in comparison with the rest of the same side, but dull when compared with the left side. The outline of the dulness was unaltered by change of position. Respiratory sounds were absent at the base of the lung. At the angle of the scapula they were heard faintly, and from there upwards they increased in intensity till at the apex they were loud and bronchial in character. Vocal resonance and fremitus were absent over the lower half of the lung. The lower limit of liver dulness was two inches below the ribs in the right nipple line. The veins over the right side of the chest were slightly dilated. The whole of the left side of the chest was hyperresonant on percussion. In the upper part the resonant area reached to the right border of the sternum. The superficial cardiac dulness was absent, and the apex beat of the heart could not be felt. On auscultation the point of maximum loudness of the heart sounds was in the normal position of the apex. There were no enlarged glands and the urine contained neither sugar nor albumin.

A provisional diagnosis of tumour of the lung with pleuritic effusion was made, and an exploratory needling was recommended. The patient absolutely refused to allow this to be done, and so terrified was he at the very idea that his wife considered his death to be due to fright.

On post-mortem examination it was found that the right lung was adherent to the chest wall all round. In a cavity bounded by the diaphragm below, the mediastinal pleura internally, and the compressed lung in other directions, were 80 oz. of serous fluid which coagulated spontaneously.

The pleura covering the diaphragm and that covering what had evidently been the diaphragmatic surface of the lung were each nearly half an inch thick owing to the deposition of layers of fibrinous lymph. In the apex of the right lung there was a caseous mass of about the size of a walnut, while scattered through the lung were numerous miliary tubercles. The left lung was emphysematous and also contained miliary tubercles. The heart was very slightly, if at all, displaced.

In the article alluded to above Dieulafoy gives a description of five cases observed by himself or others. In all of these the fluid was purulent. Three were pneumonic in origin, and in two of these the abscess opened into a bronchus, one patient coughing up 3 oz. and the other 6 oz. of pus. In one tuberculous case a cavity of the size of an orange was found. It communicated with the right bronchus, and its boundaries were the vertebral column, ribs, and root of right lung. In the fifth case an encysted empyema in front of the hilum of the lung contained 10 oz. of pus. The patient was supposed to be suffering from chronic phthisis, but no tuberculous lesion was found. He also quotes Laennec as having seen circumscribed cases of pleural effusion between the inner surface of the lung and the mediastinum, the effusion being only "one or two spoonfuls" in amount.

According to Dieulafoy mediastinal pleurisy begins like an acute febrile attack with pain, fever, cough, and dyspnœa. This mode of onset along with the absence of glandular enlargement helps to distinguish it from mediastinal tumour. If the encysted fluid travels towards the lung and affects the mediastinum only to a slight extent the signs are uncertain and the diagnosis remains indefinite. If it travels towards and exerts pressure on the mediastinal contents the collection of symptoms known as the "mediastinal syndrome" is found. These symptoms are dyspnœa, stridor, and sucking in of the chest wall, dysphagia, distension of the veins of the chest, fits of coughing and suffocation, and hoarseness, dysphonia, and spasm of the glottis. They are caused by pressure on the trachea, œsophagus, azygos vein, and the pneumogastric and recurrent laryngeal nerves, and all or only some may be present. As a rule the heart is little affected.

The principal points of interest in the above case are the position and large amount of the effusion, the slight inconvenience caused to the patient during the many months it must have taken to accumulate, and the almost complete absence of pressure symptoms. The post-mortem findings suggest that the effusion was originally an encysted diaphragmatic one, and that its extension to the mediastinum occurred comparatively late. The lung, being tuberculous and fixed, would offer less resistance to the pressure of the fluid than the mediastinal contents and the comparatively healthy left lung offered.

It is difficult to see how the patient could have been benefited in any way by surgical intervention. If aspiration had been attempted it is doubtful whether the needle would have reached the fluid owing to the thickness of the intervening lung. If one had succeeded in drawing off any considerable quantity of the fluid, most probably another case would have been added to the list of sudden deaths which have occurred during the operation of paracentesis of the chest.

South Norwood, S.E.

Clinical Notes:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTES ON FOUR CASES OF SPLENECTOMY FOLLOWING RUPTURE.

BY ROBERT COX, M.B., B.CH. R.U.I.,
FEDERATED MALAY STATES GOVERNMENT SERVICE.

IN the June number of the *Indian Medical Gazette* appears a report of splenectomy following rupture, in which the writer lays stress on three points: 1. "The long period (34 hours) between the injury and the operation, an extraordinary length of time for a ruptured spleen to exist without a fatal result," and he explains it by the fact that the hæmorrhage was controlled by two injections of morphia gr. ¼ administered at intervals before operation. 2. Sepsis due to infection of silk owing to hurry. 3. The persistence of malaria in the blood after removal of the spleen. I venture to send you some notes on four similar cases.

CASE 1.—At 2 P.M. on May 7th, 1914, in Ipoh Hospital I examined a Pathan who had been run over by his own bullock cart at 2 A.M. on the previous day (interval 36 hours); the wheels of the cart, which was loaded, had passed over his back and left arm, fracturing his humerus. He complained of pain in the abdomen, which was tender and slightly rigid, the respirations were rapid, and the pulse-rate 144. On opening the abdomen through the left rectus I found the peritoneal cavity full of blood and the spleen torn in its long axis practically into halves, which were held together only by a small portion of capsule. A second incision was made outwards at right angles to, and at the upper end of, the first incision, and the spleen, which was three times the size of the normal, removed, after which the cavity was irrigated with saline and the abdominal wall sewn up with through-and-through silkworm gut sutures. Salines were given intracellularly during the operation and hypodermic injections of liq. strych. ♏v. and adrenalin ♏xx. Immediately after operation morphia gr. ½ was injected, a further gr. ¼ being given at 8 P.M., and repeated at 8 A.M. the next morning. On the night of operation I was unable to count his pulse, but the next morning it was 134 and in the evening 120; on the third day the pulse was 90 and on the fourth day 78. A differential blood count two months after operation showed: polymorphonuclears, 29·5 per cent.; small mononuclears, 32·5 per cent.; large mononuclears, 17 per cent.; eosinophiles, 14 per cent.; mast cells, 3 per cent.; and transitionals, 4 per cent. At this time the abdominal wall appeared perfectly sound with no tendency to hernia.

The points I would draw attention to are: (1) The long interval between the accident and the operation (36 hours), no morphia having been used; (2) the absence of sepsis; I consider the time spent on sterilisation was fully justified, all stitches being removed on the tenth day; and (3) the presence of malaria after operation. I fail to see why removal of the spleen should affect the persistency of malaria.

CASE 2.—On April 21st, 1912, at 9.30 P.M., a Chinaman, who had been injured in a mining accident 13 hours previously, was admitted to Kampar Hospital complaining of great pain in the abdomen. His pulse was 120, the abdomen was tender but not rigid, and he was unable to lie down. I performed a supra-umbilical laparotomy through the left rectus and removed a ruptured spleen weighing 2 lb.; after operation the patient was treated with intracellular salines with adrenalin and injections of strychnine. He died eight hours after operation.

CASE 3.—On July 2nd, 1912, at 2 P.M., I examined a Chinaman in Kampar Hospital who said he had been assaulted eight hours previously; he complained of great pain in the abdomen, which was tender and rigid. The pulse-rate was 140 and barely perceptible. He was unable to lie down. I did a supra-umbilical laparotomy through the left rectus; the peritoneal cavity was full of blood, and I removed the spleen, the visceral surface of which was ruptured; salines were given into the cellular tissues during and after operation. At 5 P.M. morphia, gr. ½, was injected hypodermically, and at 10 P.M. another gr. ¼. The morning after operation the pulse-rate was 140, and the respirations were very rapid and shallow; he got very much worse after drinking some brandy and his condition was considered hopeless. At 10 P.M. the same day both his respirations and his pulse were slightly improved. On the third day pneumonia of the left base set in and for a fortnight his condition was critical, but after that he made a rapid recovery. A differential blood count six weeks after operation gave: polymorphonuclears, 30 per cent.; small mononuclears, 63 per cent.; large mononuclears, 5 per cent.; and eosinophiles, 2 per cent. I saw him last on Oct. 1st, 1912, in the Supreme Court. At that time there was some weakness of the abdominal wall. He said he felt quite well, but was very much distressed that his assailant only got six months' rigorous imprisonment.

CASE 4.—On May 24th, 1914, at 10 A.M., a Chinaman was brought to Ipoh Hospital by the police. He had been beaten over the abdomen four hours previously. His pulse was 110, of fair volume and tension, there was dulness in the left flank, and the abdominal wall was rigid. I performed a laparotomy and removed a badly torn spleen, four times the size of the normal. The man died 20 hours after operation.

Ipoh, Federated Malay States.

BEE-STINGS AND ANAPHYLAXIS.

By A. T. WATERHOUSE, M.D. OXON.

AN instance of severe symptoms following the sting of a bee seems to be worth recording, since it appears to throw some light on the nature of such cases.

The patient, who lives in the country, is a healthy-looking man aged 53. He had typhoid fever very badly some 35 years ago. He is subject to attacks of faintness, especially when purged by a strong aperient. Otherwise he enjoys good health. He has kept bees for some years, and while attending to the hives has frequently been stung without sustaining any apparent injury beyond the local inflammation which is usual in such cases. Last June, while taking a swarm, he was stung by five or six bees at once, and seemed none the worse for his experience.

On August 6th the patient was stung on the hand by two bees. Almost immediately he began to feel a constriction of the throat, as if the glands under the jaw were enlarging, with intense throbbing of the head. His friends noticed that the face was flushed, the eyes congested, and the upper lip swollen. This was accompanied by numbness and tingling of both hands, and there was difficulty of breathing. He went to see Mr. R. N. Farrer, of Clayton West, who has kindly sent me some notes of the case from which this account is compiled. About half an hour after he was stung the patient lost consciousness, his breathing became stertorous, and his pulse feeble; in fact, for a few seconds he was pulseless. He recovered consciousness in from three to four minutes, but had another milder attack about ten minutes later. In 12 hours' time he was convalescent.

On Sept. 2nd while walking in the garden of St. John's College, Oxford, he was stung by a bee on the upper margin of the right ear. Remembering his former experience he left the college, and by the time he had reached the street he began to feel a constriction of the throat and difficulty in breathing. He walked across the road to the nearest chemist's shop and collapsed on the floor. When I saw him, about ten minutes later, he was semi-conscious and restless, with sighing respirations. The right side of the face was congested and slightly swollen. He was sweating, and the extremities were pale, cold, and clammy. The pulse could not be felt at the wrist and the heart sounds were very feeble. The sting had been extracted and ammonia had been applied to the ear before my arrival. He was given some sal volatile and compound tincture of cardamoms, and 5 minims of liquor strychninæ were injected under the skin of the arm. He gradually recovered full consciousness, and in about three-quarters of an hour from the time when I first saw him he was removed to his lodgings. His pulse could now be felt. His condition improved steadily, and on the following day his heart was acting normally. He had no diarrhœa and did not vomit. He was very listless for a few days, but made a good recovery.

At first sight there is nothing especially remarkable about these two occurrences, so far as the symptoms are concerned. Many other cases have been recorded of similar severe effects, and even death, following the stings of bees and wasps, but on further consideration one is struck by the resemblance between these serious effects and the typical symptoms of anaphylactic shock in animals. The suddenness of onset suggests a change which cannot be accounted for by the mere absorption of a minute quantity of irritant poison in a normal individual. The depressed heart's action, the sudden urticaria and vaso-motor phenomena, and the embarrassment of inspiration are all strongly suggestive of anaphylaxis, and when these alarming symptoms are produced in a man, who on former occasions has suffered no ill-effects from bee-stings, the extraordinary increase in his sensitiveness requires some explanation, and this is afforded by the supposition that he had been previously sensitised by the former stings, which at the time appeared to be innocuous.

Oxford.

LITERARY INTELLIGENCE.—The Encyclopædia Britannica Co., Limited, have decided to issue in a cheap and convenient form six volumes of selected articles from the Encyclopædia dealing with the population, Government, finance, industries, military and naval organisation, and other important material bearing on the war with regard to France, Germany, Austria-Hungary and Poland, Russia and the Balkans, Belgium, Switzerland, and Italy, and the wars of the nineteenth century. Among the writers may be mentioned Professor Wiriath and Mr. J. E. C. Bodley, Sir Donald M. Wallace and Prince Kropotkin, Professor W. A. Phillips and Mr. Wickham Steed, Mr. J. D. Bourchier and Mr. Mijatovich, Major-General Robinson, and Colonel Maude. Each volume separately will cost 2*s.* 6*d.* net, or 12*s.* 6*d.* net, the set of six.—Among the Cambridge University Press announcements of forthcoming works we notice, as having a collateral interest for medical men, "The Electron Theory of Matter," by Dr. O. W. Richardson, Professor of Physics at King's College, London; "The Propagation of Disturbances in Dispersive Media," by T. H. Havelock, M.A., F.R.S.; "The House-fly—Musca Domestica Linn.: its Structure, Habits, Development, Relation to Disease, and Control," by C. Gordon Hewitt, D.Sc.; "The Chemical Examination of Water, Sewage, Foods, and other Substances" (Cambridge Public Health Series), by J. E. Purvis, M.A., and T. R. Hodgson, M.A.; "Water Reptiles of the Past and Present" and "The Osteology of Some American Permian Vertebrates," by Samuel W. Williston; "The Origin of the Earth," by Thomas C. Chamberlin; "Isolation and Measurement of the Electron," by Robert A. Millikan; and "The Evolution of Sex in Plants," by J. M. Coulter.

Reviews and Notices of Books.

Auricular Flutter.

By William Thomas Ritchie, M.D. Edin., F.R.C.P. Edin., F.R.S. Edin., Physician to the Deaconess Hospital; Assistant Physician to the Royal Infirmary; Lecturer on the Practice of Medicine, School of Medicine of the Royal Colleges; Lecturer on Clinical Medicine in the University of Edinburgh. London and Edinburgh: W. Green and Son. 1914. Pp. 144. Price 10*s.* 6*d.*

The introduction of the electrocardiograph has afforded much valuable information regarding the nature and the causes of heart failure. This grave and often fatal event is recognised as being not infrequently a result of diseases of the auricles. The term auricular fibrillation is now extensively employed, and the conditions underlying its production are becoming more precisely understood; and the disorder which is designated "auricular flutter" has been more recently investigated.

The volume before us is mainly devoted to a study of this subject. In order that the nature and significance of the disorders of the auricles may be appreciated, some account is first given of certain facts concerning the anatomy and physiology of the heart and the pulsations of the jugular veins. The disturbances of the cardiac action that are due to extrasystoles and auricular fibrillation and their relation to allied disorders are also discussed. Auricular flutter is defined as a pathological action of the auricles characterised by rhythmic coördinate contractions of their musculature at a rate that is greatly accelerated and is usually between 250 and 300 per minute. A brief account is given of the present knowledge of the etiology of the condition, and then the morbid anatomy is discussed, the conclusion being arrived at that the number of post-mortem examinations is as yet too small to permit of any final conclusions regarding the condition of the heart in auricular flutter. But Dr. Ritchie is of opinion that the available evidence demonstrates that flutter may be associated with widespread acute or subacute inflammation and degenerative changes in the auricular musculature, and that these changes may involve both nodes and the bundle; also that these changes may arise in the course of an acute infective disease, but that more frequently they are due to disease of the coronary vessels or to inflammation extending into the muscle from the pericardium or from the mitral and tricuspid valves.

A chapter of 46 pages is occupied by records of 53 cases, 11 of which came under Dr. Ritchie's own observation. The electrocardiograms are of interest, and if the cases quoted from other observers form rather tedious reading they are none the less valuable as corroborative evidence. The clinical features of auricular flutter are thoroughly well described, and it is pointed out that the symptoms especially associated with this condition are not direct manifestations of the extreme acceleration of the auricles, but are due to ventricular acceleration and to secondary alterations in the arterial and venous pressures. Dr. Ritchie also maintains, being here in accordance with other observers, that the majority of cases of auricular flutter supervene during the course of chronic heart disease. The remarks on diagnosis and treatment are well worthy of attention.

We have perused this volume with much interest. It shows evidence of close observation and patient investigation. As the knowledge obtained by the electrocardiograph increases, the value of this instrument in clinical medicine will become practically established.

Geschwulstlehre für Aerzte und Studierende.

By H. Ribbert, Professor of General Pathology at Bonn University. Second edition. With 612 illustrations, many of them in colour. Bonn: F. Cohen. 1914. Pp. viii. + 710. Price 24 marks.

The publication of the second edition of Professor Ribbert's book on tumours is something of an event in the world of pathology and medicine. Its author is well known as one of the most eminent pathologists living, and the subject of tumours is one that he has made peculiarly his own. The first edition of the book came out ten years ago, so that, owing to the great progress that has been made in the study of the subject during the last decade, Professor Ribbert has found it necessary to rewrite almost the whole of the volume and to add over 170 of the admirable semi-diagrammatic illustrations that form so valuable a feature of the work. In addition, the whole subject of carcinoma has been cut out of the second edition; the reader who wishes to study cancer is referred to the author's large work on "Cancer in Man," published two years ago, to which the book at present under consideration forms a companion volume.

The work is divided into two main sections, a general part and a special part, as was the first edition. The former portion, covering 113 pages, gives a general account of tumour formation in its various aspects. Histogenesis, growth, malignancy, the tendency to recurrence and to metastasis, multiplicity, the influence of trauma, and many similar points are considered in detail. Particular attention is given to the theory of germinal exclusions, or embryonic rests, as the starting-points for new growths, with illustrative diagrams and accounts of cases. As is well known, Professor Ribbert is strongly of the opinion that tumours are often, or even habitually, due to the autonomous growth of minute cellular exclusions, or rests, fragments of tissue that have been cut off from their own particular physiological commonwealth of cells. The second section of the volume contains a special description of each of the various forms of new growth, excepting carcinoma, which is only briefly mentioned. As in the first edition, the author treats the terms "endothelioma" and "perithelioma" with great severity. He almost denies that endotheliomas exist, defining endothelium as the flattened cells of connective tissue origin that line the blood- and lymph-vessels and the lymph spaces; the so-called endotheliomas are generally epithelial tumours, adenomas or carcinomas. Peritheliomas are, or should be, he says, tumours derived from the perithelium described by Eberth as lining the perivascular lymph spaces; he concludes that the tumours now called peritheliomas should be named perivascular sarcomas. He supports his arguments on these points by numerous references to the literature of these much-discussed forms of new growth.

We need not attempt to mention the innumerable matters of interest discussed in a volume with such a title when written with real knowledge and authority. Suffice it to say that tumours of all kinds are described clearly and briefly, and that the illustrations do all that illustrations can do towards giving a simplified and lucid summary of the matters described in the text. There is an adequate index, and the volume, excellently got up and printed, is a valuable addition to the literature dealing with new growths.

It should be found in every medical library and in every pathological laboratory.

Researches into Induced Cell-reproduction in Amœba.

By JOHN WESTRAY CROPPER, M.B., M.Sc. Liverp., M.R.C.S. Eng., L.R.C.P. Lond. The John Howard McFadden Researches. Vol. IV. With illustrations. London: John Murray. 1914. Pp. 112. Price 5*s.* net.

PROCEEDING on the assumption, or what is termed "a working hypothesis," expounded in the previous volumes of this series, these researches consider "normal cell-reproduction and benign tumours as caused by certain chemical agents, called auxetics, such as tyrosin, creatin, &c.; and that cancerous tumours are caused by a mixture of auxetics with another group of substances called kinetics or augmentors, such as choline and cadaverine. Auxetics are produced in the body by cell-death as the result of injury; kinetics are decomposition products produced by the action of bacteria and other organisms." This volume does not touch on the immediate cancer problem. It deals with amœbæ and the way in which auxetics and kinetics excite reproduction in these cells.

The book is divided into four parts. In Part I. the characters of the amœba under natural and artificial conditions are considered, special methods of examination are shown, and the action of auxetics and kinetics described. The amœba employed was found growing in a sodium citrate and sodium chloride solution that had been left lying exposed to the air in the laboratory for some months. The author calls it provisionally Amœba ostrea. Chiffon was moistened and placed flat on a piece of glass. On this the amœba or amœba cysts were dropped and examined microscopically. Other methods used and the means to keep the amœba under favourable conditions of flow and concentration of fluid are described. Moist air chamber methods—examination on a jelly surface—were also used, as well as the jelly method for *in vitro* staining, and for observing the stages of nuclear division. The methods of reproduction and the process of conjugation were watched. It appears that asparagin, creatine, and tyrosin are auxetics, while choline is a kinetic. Tyrosin is said to produce multinuclear forms, while so-called "radiose" types were produced by the action of auxetics and kinetics. Part II. deals with the causes of encystment and excystation. The phenomena of "encystment" are already well known to biologists. The author contends that the "amœba is actually compelled to protect itself by the action of soluble substances in the environment, which are of the nature of poisons, and which are produced under natural conditions by those bacteria that are invariably associated with the growth of amœba." It appears that those amœbæ usually encyst first which are surrounded by a dense mass of bacteria. The bacterial products against which an amœba has to protect itself are choline and cadaverine. "Excystation" takes place in the presence either of the dead bodies of bacteria or of certain soluble products—probably of the nature of ferments—of the growth of living bacteria. These products are destroyed by boiling, but not by chloroform. Their action is increased by the presence of choline. Pepsin and normal horse serums will cause excystation. Part III. deals with the preparation of "pure mixed cultures"—i.e., the cultivation together of a single species of amœba with a pure strain of bacterium. "Cultures of amœba with a limited variety of bacteria were obtained, and these, when subjected to the action of 2 per cent. HCl for 24 hours or thorough drying for six weeks, were found to be free from living bacteria, while the cysts were still alive." A tabular arrangement of the results is given. In Part IV. a parasite of amœba is described. We have given quotations to show the views of the authors—views, however, which require further investigation.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLVIII., No. 4. July 14th, 1914. Cambridge University Press. Pp. 233–356. Price 7*s.* 6*d.*—The Formation of Urine in the Frog, by F. A. Bainbridge, J. A. Menzies, and S. H. Collins, is a continuation of a previous communication. In the authors' new experiments the view is taken that the urine is derived entirely from the glomeruli, and that as it passes down the tubules sodium chloride is absorbed, and the urine collected from the ureters is therefore hypotonic to the perfusing fluid. The amount of urine formed, however, is usually very small.—The Absorption and Dissociation of Carbon-dioxide by Human Blood, by Johanne Christiansen, C. G. Douglas, and J. S. Haldane. From the authors' observations, recorded in this article, it would appear that the giving off of CO_2 by the lungs is to a large extent consequent on the taking up of oxygen. Various experiments and calculations enable the authors to state that during rest in the venous blood reaching the lungs there is an average venous CO_2 pressure of 44·2 mm., and a rate of flow of 7·7 litres per minute in a person with a total volume of 4·7 litres.—The Influence of Distension of the Lungs on Human Respiration, by Johanne Christiansen and J. S. Haldane. Although observations on this subject have been recorded in respect of dogs and rabbits, hitherto none seem to have been recorded on man. The authors conclude from their experiments, which they state, that true apnœa, apart from the inhibitory nervous effects produced during actual distension of the lungs or actual excitation along other nerve paths connected with the respiratory centre, is a "chemical" apnœa. So far as the authors are aware there is now left no experimental evidence to support the vagus theory.—The Heart-Lung and Kidney Preparation, by F. A. Bainbridge and C. L. Evans. The authors have used the "heart-lung preparation" of Knowlton and Starling to perfuse blood through the kidneys of dogs. The kidneys are very sensitive to the lack of oxygen and probably also to the absence of the intermittent driving force of the heart, so that perfusion of the isolated kidney has not yielded results which could justly be compared with those obtained in the living animal. Hence the authors used two dogs for each experiment, one for the "heart-lung preparation" and one for the kidney or kidneys, arterial blood being perfused, so that the arterial blood pressure, blood flow, and temperature were under control and the gaseous exchanges of the kidney investigated. The kidney thus isolated and perfused secretes urine. The gaseous metabolism of the isolated kidney is increased when the urine secretion is provoked by the aid of diuretics such as sodium sulphate. The respiratory quotient is similar to that of the heart. The gaseous metabolism of the kidney is not altered by changes in the rate of blood flow through the organ.—The Ferments of the Pancreas: Part IV., Steapsin, by John Mellanby and V. J. Wooley. The authors find that the stability of steapsin (1) in alkaline solution is similar to that of trypsin; (2) in acidic solution is related to the hydrogen ion concentration of the fluid in which it is contained. Steapsin cannot exist in the presence of free trypsin. The destruction of steapsin by trypsin is absolute. Therefore, when pancreatic juice is activated by enterokinase, as trypsin develops, steapsin disappears. This fact affords an explanation for the presence of trypsinogen rather than trypsin in fresh pancreatic juice. Serum or egg albumin added to activating pancreatic juice protects steapsin from destruction owing to the presence of antitrypsin in them. The action of steapsin on fat is greatly augmented by bile and bile salts. Electrolytes, such as neutral salts, have no influence on the reaction. There is no evidence that steapsin in pancreatic juice can be separated into enzyme and coenzyme. The authors conclude (*a*) that steapsin consists essentially of protein; (*b*) that its destruction in alkaline solution is due not to auto-digestion but to its inherent instability; (*c*) that although the conditions in the small intestine which favour trypsin production are inimical to the continued existence of steapsin, yet the presence of protein in a dietary may facilitate fat digestion by virtue of the capacity of the protein to adsorb the first formed trypsin.—The Sensitiveness of the Respiratory Centre to CO_2 and the Dead Space during Hyperpnœa, by J. H. M. Campbell, C. Gordon Douglas, and F. G. Hobson. The respiratory centre is particularly sensitive to CO_2. It has been stated that a rise of about 0·3 per cent. in the alveolar CO_2 pressure is sufficient to cause the alveolar ventilation of the lungs to be increased by 100 per cent. above the resting value. The authors state that in all probability this observed value is really too high, and they set themselves to obtain some more precise quantitative relationship between the alveolar ventilation and the alveolar CO_2 pressure. The authors' experiments show that a rise of 2·5 mm. in the alveolar CO_2 pressure was sufficient to cause a rise of 10 litres in the alveolar ventilation, and a rise of 2·0 mm. in the alveolar CO_2 pressure was sufficient to cause a rise of 10 litres in the total ventilation of the lungs. During the hyperpnœa caused by air containing CO_2 the dead space is considerably increased.—The Cerebro-spinal Fluid: III., The General Effects of Increasing the Cerebro-spinal Pressure, by W. E. Dixon and W. D. Halliburton. In their previous paper[1] the authors dealt with the effects produced by moderate changes in the C.S. pressure on the arterial and venous pressures. This communication deals with the effects produced by greatly increased C.S. pressure. The experiments were made on dogs fully anæsthetised with urethane and morphine. A relatively small increase in C.S. pressure, artificially produced by a pump connected to the cranio-vertebral space, causes stimulation of the respiratory (least marked effect), vaso-motor, and cardio-inhibitory centres. When the pressure is increased to 300-400 mm. Hg, considerably above the normal arterial pressure, respiration ceases in a few seconds, but the other two centres remain active and the arterial pressure rises enormously in spite of the slow heart; a little later the cardio-inhibitory centre is paralysed, and the continued activity of the vaso-motor centre still further raises the arterial blood pressure—a protective mechanism which continues to force the blood along the compressed blood-vessels. If the high C.S. pressure is kept up paralysis of the vaso-motor centre ensues and the arterial blood pressure falls. On removal of the compression the centres recover in the reverse order, the vaso-motor centre first and the respiratory centre last. The spinal centres as tested by the occurrence of convulsions after an injection of strychnine recover their activity later still. The changes in venous pressure during cerebral compression vary in different animals, and are not always easy to interpret.—The Influence of a Vitamine-free Diet on the Carbohydrate Metabolism, by Casimir Funk and Count von Schönbrun. Pigeons kept on vitamine-free diet develop a tendency to hyperglycæmia with diminution of the glycogen of the liver. This hyperglycæmia is especially marked in the case of sugar-free diet, which is followed by an entire disappearance of liver glycogen. In three experiments made, the addition of vitamine from yeast to the latter diet produces a very marked formation of glycogen in the liver and a diminution of the sugar in the blood. Vitamine would seem to have a distinct influence on the glycogen metabolism. In the case of the fat-free diet the glycogen content of the liver is increased.—On Some Cardiac Reflexes, by F. A. Bainbridge. The experiments were made on anæsthetised dogs, the blood pressure and respiratory movements being recorded by the usual methods. The slowing effect on the heart of stimulation of the central end of one vagus by way of the other vagus is well known. In no case, however, does this central stimulation slow the heart by decreasing the accelerator tone. It would therefore appear that there is no reciprocal action between the vagus and accelerator centres. Acceleration of the heart is known to be produced in anæsthetised animals (with or without curare). This is mainly due, it appears, to decrease of vagus tone, but acceleration can also be caused by increase of accelerator tone, while some late increase is produced by the setting free of adrenalin. The effects on the circulation and respiration of stimulation of the sciatic nerve are very similar.—The Determination of Lactic Acid, by Charles G. L. Wolf. This paper will be specially interesting to the biochemists.—On the Constancy of the Systolic Output under Varying Conditions, by Joseph Markwalder and E. H. Starling. A continuation of papers already published from University College. From their new experiments the authors conclude that, taking the coronary circulation into reckoning and given a constant venous outflow, the output of the heart, within much wider limits than had been previously imagined, is independent of the arterial pressure, of temperature, and of heart rate.

ASYLUM REPORTS.

Scottish Western Asylums Research Institute (*Annual Report for the Year ending October, 1913*).—The work done during this year included an exhaustive examination of the cerebro-spinal fluid from a large series of mental cases, including chemical examination and immunisation experiments. Special work has also been done in the clinical examination of cases of adolescent insanity with a view to differentiating the various forms of this disease. A course of six lectures and demonstrations was given by the director, Dr. Ivy Mackenzie, at various asylums, and also a course of instruction in technical methods of blood and cerebro-spinal examinations to the medical officers of the associated asylums. Dr. Mackenzie proceeds to give a general review of the laboratory work during the last four years—i.e., since the opening of the institute. The results of investigations on the relation between syphilis and insanity go to show that the mental health of the community is affected by syphilis in at least five different ways: 1. General paralysis. 2. A form of mental affection that follows syphilitic disease of the brain vessels and coverings. 3. A form of mental affection in which the patient suffers from depression and excitement, although there is no direct evidence of the presence of either of the two foregoing diseases. 4. Idiocy and imbecility in congenital syphilis. 5. A condition of weak-mindedness in children and adults (not sufficient to be called imbecility) whose parents suffered from syphilis, although there may not be any bodily evidence of the disease in the patients themselves. In order to deal practically with this aspect of mental disease Dr. Mackenzie has made investigations as to the extent and significance of syphilis and the means of influencing its spread and curtailing its course. With regard to the latter the following conclusions are come to. It is a primary necessity that the public, and in particular young people, should be educated in these matters. Such education must not be confined to simple instruction in the biological facts of the disease; it must also include a comprehensive consideration of the social conditions which determine its dissemination and an appreciation of the problems of poverty and vice. Until the public is thus educated compulsory notification would be futile. There should be a general exposure of the conditions which lead to the spread of the disease and a drastic treatment of the housing question is to be recommended, not as a philanthropic project but as a business proposition, in the interests of the public health. With regard to prostitution, it is essential to realise that the position of women in the labour market is one of the many influences which help to recruit its ranks. Blaschko has pointed out that prostitution in large industrial centres varies inversely as employment in industry. A solution of the social economic problem would go a long way to palliate this social evil. The prevailing spirit of materialism is also a powerful factor in the spread of immorality. With regard to curative measures, Dr. Mackenzie considers that the medical student should receive a more systematic and thorough training in venereal disease; and that all hospitals should be open to venereal disease, without respect to its stage. Provision should be made for placing at the disposal of the profession generally the most adequate means of diagnosis and treatment. Steps should also be taken to provide that patients who are encountered in the administrative medical work—i.e., insured people—may be treated in a thorough and effective manner, as they are in the army and the navy. In the investigation of adolescent insanity an attempt was made to discover, if it were possible, to distinguish between organic and functional cases. The two principal methods of examination were those of the cerebro-spinal fluid and of the eyes. These investigations revealed the fact that some cases are transient, while others do not recover, and that among these latter there is evidence at certain stages of toxic influences, as shown by the eye conditions, and of tissue change as shown by the abnormal cerebro-spinal fluid. With regard to this latter type some cases begin with a profound somatic disturbance. This acute progressive stage is followed by dementia which ceases to progress until a recurrence of the acute condition occurs. The general impression has been that heredity is a more potent factor in the functional than in the organic cases.

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[1] THE LANCET, July 25th, 1914, p. 237

Glasgow Royal Asylum (*Annual Report for the Year 1913*).—The total number of patients under treatment was 567, the average number resident being 451. The admissions amounted to 120, and were all of the private class. Heredity was acknowledged in 51, or nearly 50 per cent. of the cases. With regard to the probable causes, in 17 cases it was apparently alcoholic excess, in 12 syphilis, in 14 the epochal periods of life, in 16 bodily illness of some kind, not included in the above, in 5 mental stress, in 24 heredity seemed the sole cause, while in 15 no adequate reason for the breakdown could be discovered. The discharges numbered 98, of whom 52 were recovered, making a percentage of 43 on the admissions. Dr. L. R. Oswald, the physician-superintendent, remarks that the criticism may be made that the recoveries in mental disease are not permanent, but that a large number sooner or later relapse. The partial truth of this must be admitted, the reason being that on account of a want of knowledge of the true nature of the illness patients are exposed after recovery to risks of relapse to which they ought never to have been subjected. Mental disorders predispose to recurrent attacks, instead of conferring immunity on the patient, who, therefore, ought not to expose himself, after recovery, to the same causes which brought on his illness. Thus students and teachers return to their studies although brain work was the cause of their breakdown; alcoholics resume their alcoholic excess, and others expose themselves to avoidable stress with the inevitable result of a further attack. The deaths were 27 in number, a percentage of 6 on the average number resident. Dr. Oswald considers that the borderland and psycho-neurotic cases are suitable for treatment in the wards of a general hospital. Nothing would do more to dispel the belief that there is some essential difference between diseases of the brain affecting the mind, and diseases of other organs of the body, than their treatment side by side in a general hospital.

Ayr District Asylum (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 711, the average daily number being 567·45. There were 162 admissions. Dr. G. Douglas McRae, the medical superintendent, remarks that, to judge from the statistics of the incidence of insanity and the general population during the last five years, it would appear that certifiable insanity has been on the increase among the male section of the community, while it is actually on the decrease among women. It is also notable that during the past five years the average proportion of cases with evidence of excessive alcoholic indulgence was 38 per cent. among the men admitted, and 16 per cent. among the women, while this year the former have increased to 50 per cent. and the latter have declined to 10 per cent. Hereditary predisposition was ascertained in only 24 per cent. of the cases. Dr. McRae also calls attention to the apparent increase in the prevalence of general paralysis; in 1908 it was present in 9 per cent. of the male admissions, but this year it has increased to 14 per cent., while it was responsible for no less than 25 per cent. of the total number of deaths. The number discharged was 93, with a recovery rate of 41·36 per cent. The high rate among the men—namely, 43·48 per cent.—however, is mainly due to the fact that a large proportion of the cases had been temporarily removed from the cause of their mental aberration—namely, abuse of alcohol. The deaths amounted to 48, the proportion on the average daily number resident being 8·94 per cent. Tuberculosis was the cause of death in only three cases. Dr. McRae considers that the steady and marked diminution in the tuberculosis death-rate of the district during the last five years is due to the provision of the new hospital, which was opened in 1906.

Cumberland and Westmorland Asylum (*Annual Report for the Year 1913*).—The total number of patients under treatment during the year was 1039, the average daily number resident being 866. The direct admissions amounted to 174, the ages ranging from 8 to 84 years. Hereditary predisposition was admitted in 30·5 per cent. of the cases and alcoholic excess in 9·7 per cent. In 31 per cent., owing to defective history, no cause for the attacks could be ascertained. Ninety-six patients were discharged during the year, with a recovery rate of 36·2 per cent. Although this rate is 3½ per cent. higher than the average in English county and borough asylums, it is 6·4 per cent. below the high rate of the previous year, and considerably below the average recovery rate of this asylum. The lowered rate is accounted for by the unfavourable type of the admissions last year. Dr. W. F. Farquharson, the medical superintendent, lays stress upon the importance of the early treatment of mental cases in an asylum, and calls attention to the fact that the greater the delay in placing such cases in a properly equipped mental hospital the more prolonged is the attack likely to prove and the less the chance of ultimate recovery. Dr. Farquharson finds that the open-air treatment appears to have a remarkable effect in prolonging the life of the bed-ridden cases. There were 72 deaths, making a death-rate of 8·3 per cent. on the daily average number resident. The cause was verified in every case by post-mortem examination.

Sunderland Borough Asylum (*Annual Report for the Year 1913*).—The total number of patients under treatment during the year was 483, the average number resident being 389. The admissions amounted to 90, which is the lowest number since the asylum was opened 18 years ago. Dr. J. Middlemass, the medical superintendent, states that the cause for this is by no means clear. Usually when trade is good the admissions tend to increase in number, owing largely to the increase in cases due to alcohol. Last year the conditions which usually contribute to the prevalence of alcoholism were present, but there was a decided diminution in the admissions due to this cause. There were only 19 of these, whereas in 1912 there were 27 cases in which it was either the principal or contributory factor in causing the mental attack. This is a very considerable decrease, and it is to be hoped that it will not prove merely temporary. Of the other causes producing mental disease, those associated with the critical periods of life range next in order to alcohol. There were 14 in which this appeared to be the chief cause. Mental stress was the cause in 11 cases. It is striking how often the death of a relation after a long and harassing illness is followed by an attack of depression on the part of the nurse. The cases of general paralysis were 10 in number. The number of these cases seems to be again increasing, after being at an astonishingly low figure. Three years ago only 5 were admitted, but since then there has been a steady slight rise. Epilepsy forms nearly 15 per cent. of all the cases. The discharges amounted to 52 for the year, with a recovery rate of 42 per cent. There were 42 deaths, of which 5 were from pulmonary tuberculosis. With regard to research work in mental disease, Dr. Middlemass states that there is probably not more than £4000 a year spent in the investigation of the purely scientific aspects of mental disease. Considering that there are about 120,000 patients in all the asylums in this country, this expenditure seems ridiculously inadequate. Progress commensurate with that which is being made in other branches of medical science can only be expected in mental diseases when there is a large army of workers, as there has been in these other branches. The necessary research work would probably be best carried out in connexion with existing Universities, which already possess the necessary laboratories, or where these could most easily be placed if not already available. To the support of these the Universities, the Government, and Asylum Visiting Committees might all contribute. To these laboratories the medical officers of asylums could have recourse for instruction and for direction in their own scientific investigations. Could such a scheme be actually set on foot there is every reason to hope that in no long time very material advances in the knowledge of the causes and the treatment of mental diseases would be made.

THE LANCET.

LONDON: SATURDAY, OCTOBER 17, 1914.

Coöperation Between the Civil and Military Sanitary Services.

FOR some weeks past all over the country training camps have been in process of formation for the new army that is coming into being to reinforce and, where needed, to take the place of our regular troops. The call has been well responded to, and the numbers of recruits coming forward are satisfactory. More, many more, are wanted, but there seems no reason to doubt that they will be forthcoming. The first half million men were enrolled in a very short space of time, a second force as large is collecting, and if yet another million are wanted they will be found, while it is most satisfactory to see that adversities, indicating the prolongation of the struggle, have led to more rapid joining of the colours. We trust that the rate of recruiting, however, will promptly increase, as it is most important that the new men should get into training before the cold weather definitely arrives.

The aggregation of large numbers of young adults, of an age susceptible to disease, in circumstances of urgency, when the arrangements adequate for a small body of men have immediately to be expanded so as to suffice for a number perhaps five or six times as great, produces a condition of danger to health. This is a matter of grave importance, and one where the civil and military authorities must work hand in hand to secure the most favourable conditions. The sanitary state of barracks in this country is probably on the whole satisfactory; in the buildings of modern construction there is no doubt that this is the case. In the smaller and older buildings probably matters are in a fairly good state as regards essentials. As for camps there has been so much practical use of these during late years in manœuvres and for training purposes that their sanitary requirements are well understood, and we may suppose that all necessary arrangements are now carried out as a matter of course. But at the present time the whole strength of our well-trained but small regular medical and sanitary staff is in the field, and not available for safeguarding the health of the new army that is being built up at the military centres in this country. Its place has been supplied no doubt as far as possible by civilian medical men and retired medical officers, who exercise a general control over the arrangements, and by men of the St. John Ambulance Association and Red Cross Society, who attend to details. Fair accommodation has been provided, and the needs of this army in regard to feeding, clothing, and equipment are being satisfactorily met throughout the country. Thus, for instance, we are now told that a sufficiency of blankets for present and future needs has been assured. Regular supplies have been arranged, private charity has to some extent been systematised, and there seems every reason to believe that as our new recruits join, their needs in camp will be met promptly.

The preservation of the new soldiers' health and the prevention of the development of infectious disease are matters of the greatest concern, not only in regard to the value of the fighting force, but in regard also to the health of the populations in the neighbourhood of the temporary camps that have been established. In spite of all precautions it is likely that some cases of infectious disease will occur, and under the circumstances the liability to spread is obvious. No doubt all the medical officers in charge of these camps are fully alive to this danger, and are carefully on the watch for any suspicious cases. Only those who have had to deal with similar rapid concentrations of human beings, and the multifarious arrangements that have to be made for their accommodation, feeding, clothing, instruction, and so forth, can appreciate the difficulties of the position and the risk there is of infection being introduced and disseminated in spite of all precautions. As we noted at the time, the medical officer to the Local Government Board, after consultation with the War Office, invited five or six weeks ago the medical officers of the Public Health Service, in districts where troops are likely to be stationed, to place themselves in communication with the local military medical authorities, and to offer their services. By so doing they would be of the greatest assistance, and especially in advising as to local water-supplies, as to the disposal of refuse, the carrying out of drainage and conservancy arrangements in accordance with local conditions, and the control of infectious disease (including provision of hospital accommodation and disinfection). It is to be hoped that the local health officer and the military medical officer in charge will be in close touch with each other—*dare operas mutuas*; so cordial are the relations between the civil and military branches of the profession that there is happily no doubt that such will be the case; it will be to the advantage of each, and to the benefit of the civil population and the troops in equal proportion. Typhus fever, enteric fever, and small-pox are named as the three diseases especially to be looked out for, especially the two latter. Small-pox ought to be a negligible item, and as far as the regular army is concerned it has practically ceased to exist; but owing to the lamentable neglect of vaccination in this country during the last few years there is now a considerable unprotected youthful population, and until the recruit has been satisfactorily vaccinated undoubtedly a real danger is to be apprehended on this account. The danger from enteric fever would arise not so much, probably, from insanitary conditions in a general sense as from risk of carrier cases. The War Office is arranging that every medical officer of health should be notified when a soldier convalescent from this disease enters into his district. Besides these cases of possible conveyance of infection it is to be apprehended that mild and unrecognised cases may also constitute a danger. Under the conditions of camp life such a danger is very greatly increased. No doubt the most watchful attention will be given to this matter, but in spite of every care experience has shown that, in the circumstances, spread of the disease is to be apprehended. However, when a danger is fully recognised it is almost overcome. The necessary precautions are well known.

The Local Government Board is actively co-operating with local medical officers of health in circumstances of difficulty, and we feel sure that every assistance will be given to the military medical officers in their very arduous task of training their men in sanitary methods and the prevention of disease, a duty of quite equal importance to that of the treatment of the sick and wounded in hospital or in the field. The work of the Royal Army Medical Corps comprehends the whole scheme of sanitation, and as Sir ALFRED KEOGH, who has now returned to take charge of the Army Medical Service, has well pointed out,[1] a "scheme of sanitation which omits to pay constant and unremitting attention to all the thousand minute details of the soldier's life, his food, his clothing, his housing, his work, can never hope to recover the ground so lost by the most brilliant schemes of water sterilisation or the most elaborate methods of disposal of excreta." In their onerous work the military authorities may count upon every assistance from the civil sanitary services which is requisitioned.

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[1] "The Territorial Medical Service," by a Special Correspondent of THE LANCET, with preface by Sir Alfred H. Keogh.

MEDICAL SOCIETY OF LONDON.—The first ordinary meeting of the session was held on Oct. 12th. A vote of thanks to the retiring President, Sir David Ferrier, was proposed by Dr. F. de Havilland Hall, seconded by Mr. Willmott Evans, and carried with acclamation. Sir David Ferrier replied. Dr. Walter Broadbent proposed a vote of thanks to the other retiring officers. This was seconded by Dr. Steele Perkins and passed unanimously. Dr. R. A. Young, the retiring honorary secretary, replied. Sir David Ferrier then introduced the new President, Sir J. Bland-Sutton, and invested him with the badge of office. Having taken the chair, Sir J. Bland-Sutton delivered his opening address on Cancer of the Small Intestine, which is published in full in this issue of THE LANCET (p. 931). A vote of thanks to the President for his address was proposed by Mr. F. Swinford Edwards, seconded by Sir StClair Thomson, and carried unanimously.

Annotations.

"Ne quid nimis."

MITCHELL BANKS, A GREAT SURGEON.

THE third Mitchell Banks Memorial Lecture was delivered last week by Sir Victor Horsley, who drew some valuable present-day lessons from the life work of the famous Liverpool surgeon, of whom he said that he had tried to live up to Pasteur's scientific ideal that "the doctor must consider what people will say about him a hundred years hence and not trouble himself about the blame or praise of to-day." Sir Victor Horsley pointed out that Mitchell Banks, Edinburgh born and bred, was the child of a school celebrated in particular for the academic recognition of anatomy, while Goodsir, whose pupil Mitchell Banks was, had also comprehensive views of medical work in its relations to the social life of the people. These things undoubtedly conduced to the double development of Banks's work at Liverpool, whereby during his tenure of the chair of anatomy that department became the most flourishing in the old University College of Liverpool, while later as a professor in the new University his work showed deep sympathy with the aims of social science. The two subjects of Mitchell Banks's work chosen by Sir Victor Horsley for particular mention as honourably associated both with the name of Banks and with the record of Liverpool surgery, were the treatment of cancer and the treatment of hernia. Sir Victor Horsley showed that when nearly 40 years ago Banks published in detail the results of his work on cancer of the breast he dispelled a sort of intellectual fog by establishing two principles—viz. (1) that the whole of the breast tissue must be removed because even in parts of the gland not obviously the seat of active cancer there were nevertheless changes which must be regarded as pre-cancerous; and (2) that all the lymph glands in relation to the mammæ should be removed on the ground that it is impossible to determine at the time of operation, when they appear to be normal, that they are not really infected. Mitchell Banks was a motive force in dispelling the fatal error of incomplete operating in such cases, and well deserves to receive the credit due, though even now, Sir Victor Horsley considers, the necessary procedure is not followed in its entirety except by a few surgeons. In another direction, with what Sir Victor Horsley aptly terms "practical prescience," Mitchell Banks seized upon a common infliction imperfectly treated, and was untiring in his efforts to ensure a real facing of the conditions, so that surgical methods could be adopted, based alike on anatomical knowledge and well-informed prognosis. Mitchell Banks was very early to see that the proper treatment for hernia is as a rule the radical operation, a point of view which to-day seems merely reasonable, but which, when Banks was a young man, represented dangerous speculativeness. The radical cure of hernia could not be regularly employed, save as an adjunct to an operation for the relief of strangulation, until Lister had freed operative procedures from the risk of infection, but when freedom from sepsis was ensured it became wrong to regard the application of a truss as a satisfactory measure. Sir Victor Horsley pointed out in a vigorous plea for thorough surgery that the only real pathogeny of hernia is that formulated by Mr. R. Hamilton Russell,[1] who has taught that a preformed sac is the causal factor of hernia; in complete line with this teaching is Mitchell Banks's procedure for radical cure—namely, removal of the sac with restoration of the continuous peritoneal surface and protection of the hernial area by closure of the femoral canal. Sir Victor Horsley's address was both a fitting testimonial to a great surgeon and an outspoken plea for thoroughness in our surgical methods.

OLD FIREARMS AND GUNSHOT WOUNDS.

EARLY Arab historians call what is credibly believed to have been gunpowder "Chinese snow" and "Chinese salt," and the Chinese are supposed on good authority to have used explosives and some sort of cannon centuries before the Christian era. Their invention was known as "Greek fire" to the Byzantine Greeks, then to the Arabs, and it reached Western Europe in the thirteenth century. Firearms have been discussed by many writers from the time of Leonardo da Vinci onwards. One of the early classic authorities on wounds in war, including gunshot wounds, is the quaint Hans von Gersdorff, whose "Feldtbuch der Wundartzney" was printed in the ancient free city of Strasburg in 1516 and again in 1526. Von Gersdorff's curious black-letter pages, written in a German closely resembling the modern *Strasbourgeois*, have almost a pacifist tendency when compared to the ferocious record of modern warfare, with its howitzers built into concrete platforms, its holocausts of slaughter and appalling wounds. The "Wound Medicine Book" deals largely in rude woodcuts, and we are shown a soldier, a rough man suffering great pain, as the ancient engraver has managed to portray, from whose chest an arrow or bullet is being withdrawn by an army surgeon. A soldier holds the sufferer by the shoulder to steady him on his three-legged stool, while the surgeon, distinguished by black shoes and a slightly more elaborate costume, is performing the operation. The patient might be the Valentine of "Faust." The same kind of cut reappears in William Clowes's classical work on surgery in the time of Queen Elizabeth, but the costumes in this latter case seem to date from the fifteenth century. Von Gersdorff, who, by the bye, does not seem to have been a noble, for he rejoiced in the peasant nickname of Schielhans, is more explicit on the subject of arrow wounds than of gunshot wounds. When the subject has been wounded by an arrow there are three ways of treating him. Either, he says, the shaft must be pulled out bodily, which is risky, or driven right through to the other side, which is very fatal, unless some fleshy portion of the patient only is involved. An arrow through the buttock, for instance, may be pulled right through. In a third case, when the arrow remains fixed, several courses may be adopted. The wound may be enlarged with a scissors or knife or, better still, it may be allowed to grow corrupt, when in the general softness the arrow-head will come away of itself! In dealing with gunshot wounds the procedure recommended is similar, except that it is not suggested that the bullet should be pushed through the wounded part. Probing by sounds, and inunctions of oil with the hand, are recommended, and the wound may be enlarged by cutting instruments or by the old now disused instrument called "the dilator," which Schielhans calls the "hole-maker" (*loucher=locher*). The smashing wounds caused by modern projectiles are not contemplated by this old writer, whose picture of a bullet shows us a missile only about three inches in diameter striking a man's leg. The old field-pieces of that age were rarely very large. One only is represented by von Gersdorff. It is about six feet long and is being used in a battle between men armed with lances. In Francisco Rota's book on "Gunshot Wounds," published at Bologna in 1555, there is a design on the title page representing small field-pieces, some of which have solid non-spoked wheels and the arquebuses of the day—huge muskets, propped up upon tridents. The arquebus only came to be shot from the shoulder after it had been for long shot as a cannon from a stand, as Robinson Crusoe shot his fusils. The Germans, curiously enough, are said to have been the first to fire the arquebus from the shoulder. They are now said, on all hands, to fire from the hip, and it is possible that the arquebus being very heavy and awkward in make was thus anciently fired. A remarkable point that may here be noted is that the ancient descriptions of the effects of a severe gunshot wound do not differ from those in the modern text-books. In both ancient and recent writers there is the same account of the trembling fit, the complaint of cold, the pallor, the suddenly lowered pulse after a bullet has gone home. William Clowes holds almost this modern language in the time of Queen Elizabeth, and the dreary theme has been elaborated by the master hand of Tolstoi in "War and Peace." We, at the present, realise all these descriptions to a strange degree. And old von Gersdorff, who wrote of little battles where few fell, on that terrible tortured borderline where now the hugest battle of all time is raging, is a notable and sad reminder to us that civilisation since his time has brought its losses as well as its gains.

CHINA TEA.

IT is well known, of course, that China tea contains much less tannin than the teas of India and Ceylon, but, as we have pointed out, if the infusion contains theine and tannin in a certain ratio, neither of these would appear to be present in the free state. The amount of theine upon which the restorative qualities of tea depends in all three teas is much the same. The existence of three kinds of tea enables the consumer to choose the one which suits him, and his judgment is commonly based on popular opinion as to flavour. The Board of Trade returns show that the consumption of China tea in the United Kingdom for the first eight months of the present year exceeded by 4,000,000 lb. that for the corresponding period of 1913. Notwithstanding the temporary insecurity of the Eastern seas, the supply of China tea, we understand, which has reached London is large enough to enable the importers to sustain the market at normal rates, so that the increasing number of consumers of China tea will not suffer in price. The reason, no doubt, for the increasing popularity of Chinese tea is that the Chinese Government is becoming alive to the need of modern methods of treating the plant. It is picturesque, if nothing else, that there should be a chance of our reverting in these days to the old-fashioned growths which held their own at the tea tables of Queen Anne, when the fluid was called "tay" and the leaves cost £1 a pound.

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[1] The Saccular Theory of Hernia and the Radical Operation, THE LANCET, Nov. 3rd, 1906, p. 1197.

THE ACTION OF THE IODIDES ON THE HEART AND BLOOD-VESSELS.

THOUGH the iodides are among the most frequently used drugs of the Pharmacopœia their mode of action is still imperfectly understood. Thus in arterio-sclerosis some suppose that they promote absorption; others that they decrease the viscosity of the blood; still others, such as Potain, that they lower blood pressure by acting on the heart and vaso-motor nerves. On the other hand, Romberg, Kraus, and Dr. James Mackenzie could not find any influence on the heart or arterial lumen. Experiments on animals have been equally contradictory. In the *Johns Hopkins Hospital Bulletin* for September Dr. David I. Macht has published an important research. Previous observers only investigated the action of the iodides as such, without paying attention to the rôles played by their constituents, iodine and potassium or sodium. Dr. Macht prepared Locke's solution according to the following percentage formula: $CaCl_2$, 0·024; KCl, 0·042; $NaHCO_3$, 0·03; NaCl, 0·9; dextrose, 0·1. In order to study the potassium constituent of KI he replaced part of the NaCl by an equimolecular weight of KCl. In order to study the action of the iodine constituent he replaced part of the KCl by an equimolecular weight of KI. The solutions were perfused through the abdominal aorta of a frog and the outflow from the veins of the legs was registered on a revolving drum. The results were as follows. The I ion markedly constricted the vessels, the K ion relaxed them, and the Na ion had little or no effect; if anything it increased the vascular tone. The effect of injections of the salts KI and NaI was a combination of the effects of their component ions. NaI distinctly constricted the vessels. KI produced either no effect or a slight increase of tone, showing that the I effect balanced or overbalanced the K effect. On the frog's heart the K ion had a very depressing action, causing speedy arrest in diastole. Iodine was an active stimulant and Na had a slightly tonic effect. The effects of KI and NaI could easily be explained by the effects of their components. NaI stimulated. KI showed the predominating influence of the K ions; weak solutions produced slowing and weakening and stronger solutions arrest. Finally, experiments were made on the blood pressure of intact animals. Locke's solution injected in quantities of 5 c.c. per kilo. produced no appreciable change nor did NaI or KI in small doses. Large doses of NaI produced no effect or a slight tendency to rise; of KI, a marked fall. The latter was due to the K ions, for a similar effect followed substitution of KCl for NaCl in Locke's solution. When the effect of I ions was studied by substitution in Locke's solution, contrary to expectation, no rise in blood pressure was observed. The explanation was furnished by an observation made many years ago by Boehm, who showed that considerable quantities of iodine could be injected into an animal without producing a rise in blood pressure, because the iodine combined with the proteids of the blood. The practical conclusion follows from these experiments that when iodides are given to depress the circulation, as in aneurysm, it is not indifferent which iodide is chosen. It also follows, as far as experimental evidence goes, that the iodides have no special virtue in lowering blood pressure, but that the effect is entirely due to potassium, and might even more readily be obtained from other potassium salts. In this connexion the recent summary by Schwalbe of the views of German clinicians is interesting; the weight of opinion is unfavourable to the use of iodides in arterio-sclerosis.

THE RECLAMATION OF THE CAMPAGNA.

MR. L. VILLARI wrote an article on this subject in the *Edinburgh Review* recently which is of considerable medical interest. The Campagna is a congeries of hummocks rising into hillocks, intersected by *fossæ* either stagnant or dribbling their way into the Tiber. How is it that this should be the true description of an expanse of soil which was once famed for vegetative energy, and which, in response to cultivation, was covered with patrician residences and surrounded with gardens over which Pomona and Flora seemed in person to preside? How is it that a tract of country once a favoured health resort should have degenerated into a fever preserve, repelling that occupation which is the first condition of its rehabilitation? To these questions Mr. Villari gives an answer, which, we are happy to gather, is but the prelude to an independent treatise in which not only the "decline and fall," but the rise and "Risorgimento" of the Agro Romano will be set forth in full and authoritative detail. Meanwhile, views of the origin of one of the most characteristic phases of the Campagna, its unhealthiness from "malaria," are gaining ground which imply that insect life, in some of its most pernicious developments, is not the *causa causans* of the "malaria" in question, but is itself a symptom of a deeper pathological coefficient without which the said insect life would cease to exist. The Poet Laureate of Nature-study, in a magnificent episode of the Georgics, goes down to the root of the matter in that one most significant phrase—"justissima Tellus," a phrase interpreted by one of his best commentators in this sense: "Justissima, quippe quae creditum (semen) cum foenere reddere solet" (wont to pay back with interest the seed entrusted to it). Left derelict, or deprived of its proper treatment, the soil avenges itself by an unerring retribution—its unutilised vegetative energy taking the form (in Léon Colin's expression) of a "telluric respiration" which, infecting the atmosphere, evokes the insect (the scavenger of the air) which gives back the poison it absorbs. Wherever cultivation has done justice to the soil, rendering the "telluric respiration" healthy, the insect disappears and with it the "malarious" infection. To this Mr. Villari bears emphatic testimony, showing how the "bonifica" (reclamation) now in progress under Government is, precisely in those localities where it has been thoroughly practised, the prelude to the extinction of the insect (deprived of its pabulum), and, coincidently with this, the disappearance of the "malaria" and of the fever it induces. In other localities, where the "bonifica" is still to be effected, the State provision of quinine and wire gauze in the dwellings have had most salutary uses—the notable reduction of sickness, as shown by Mr. Villari's figures, being a result as incontestable as it is gratifying. But these are preventive measures, and the money expended on them, while a heavy draft on a not very affluent exchequer, would be commendably employed in reinforcing and accelerating the "bonifica" already yielding such a rich and perennial return. The appropriate utilisation of the vegetative energy by scientific agriculture—in a word, the restoration of the Campagna to the salubrity and the amenity it enjoyed under the Antonines—such is the prospect to which Mr. Villari invites us in the article above referred to, a prospect, moreover, of which we are promised a fuller fruition in the treatise on which he and his coadjutors are now engaged.

CARRIAGE OF POLIOMYELITIS INFECTION.

IN a report recently issued by the Local Government Board[1] Dr. H. A. Macewen gives the facts as to the distribution in place and time of the 56 cases of poliomyelitis known to have occurred during the summer and autumn of 1913 in Barrow-in-Furness and the wide area, including much of Westmorland, which lies between Barrow and Appleby. Groups of cases, amounting to 30 in all, occurred in Barrow between the end of March and the beginning of August; from July to the end of the year the disease ceased to appear in Barrow, but odd cases or small groups of cases came to notice in places within a 30-mile radius, and even beyond. Within Barrow the affected houses were in some instances close together, and some associations, direct or remote, could be traced between the persons attacked. In the first group of invaded dwellings in Barrow "the child No. 1 shortly before falling ill on March 23rd played with the child No. 3, the onset of the illness of the latter being some time in April, though the exact date could not be ascertained. The children Nos. 10 and 20 in Barrow Group No. 2 resided in the same street within a few doors of one another, and it was customary for them to play together before the first child fell ill. ...... The mother of child No. 8 in the Barrow Group No. 1 had often been in the house of child No. 3 during the course of its illness and before her own child fell ill"; and so it was with other cases within and outside Barrow, where not infrequently circumstances were detected which would have permitted the inference to be drawn that an infection, with a variable incubation period, had been carried in some way from one known case to another. Against all such theories of personal carriage of infection, however, Dr. Macewen places the fact that there was no single instance of multiple cases in the same house amongst the whole of the 56 cases investigated. The other children of the family, brothers and sisters, living in the houses where cases occurred amounted to 139, the great majority of ages being under 10. It is difficult to reconcile the supposition that the disease had been spread by direct or indirect personal carriage of infection with this absence of attacks among other members of the families, unless, perhaps, on the hypothesis that the total number of persons in this area who were susceptible to attack by poliomyelitis was very limited indeed. The suggestion that the infecting organism is introduced by biting flies has often been made, and on the hypothesis that bites from an infected fly are necessary the limitation of cases to single members of a family would be intelligible. But before such an explanation can pass out of the realms of mere conjecture the fly must be identified, and some evidence be produced as to whether the virus is carried by the fly from human case to human case, or whether it is otherwise acquired by the insect. It is noteworthy that as a rule there was no history of concurrent illness among members of the family of the households attacked, although Barrow was visited in the spring of 1913 by a severe outbreak of influenza, affecting a large number of persons and causing several deaths. Information on many other points is set out and tabulated by Dr. Macewen, and though it leads to no definite conclusions as to the mode of spread of poliomyelitis, the report is of distinct value as indicating the conditions of occurrence and distribution of the disease which require to be explained by any satisfactory theory of its causation.

THE LOCAL THERAPY OF TETANUS.

A large number of cases of tetanus have been reported as occurring among the soldiers wounded at the front, and it may not be out of place to draw attention to an article on this subject by Dr. G. Vitello published in *Il Morgagni* of July last. The writer urges that, although tetanic spores resist the action of antiseptics, they are not of themselves capable of producing the intoxication. In order that they may be put into a condition to secrete the toxins it is necessary for them to be bacterially associated with other micro-organisms which, being much less resistant to the action of antiseptics, can be easily destroyed, even by weak solutions. It is presumable, therefore, that in the disinfection of a tetanic wound the micro-organisms which are the most efficiently destroyed are not the spores which resist for a long period the action of the antiseptic, but those micro-organisms which are found with them in the wound and which under natural conditions confer on them the faculty of virulence. If, on the other hand, the spore is alone and without the collaboration of these germs, it is not capable of secreting the toxins and remains inoffensive in the wound. It has, moreover, been experimentally demonstrated that rigorous antisepsis of wounds during the period of incubation is often successful in aborting the disease in its pretetanic phase. The use of tincture of iodine is to be strongly recommended for this purpose and Formiggini, in a case of tetanus which had developed subsequent to a wound of the upper eyelid and which he had treated by suitable disinfections with tincture of iodine, showed that in the bacteriological examination of material taken from the wound ten days after its occurrence, a bacillus was isolated, having cultural and morphological characters similar to that of Nicolaier, but which was not pathogenic to guinea-pigs and rabbits. Hence it may be argued with some degree of probability that tincture of iodine used in tetanic wounds has the property of rendering innocuous the specific micro-organisms, or of ensuring that should tetanic phenomena unfortunately make their appearance they will show themselves in a mild form. Mention of another method of treatment must not be omitted—namely, the local sero-therapy practised for more than ten years in Italy by Professor Tizzoni. Sero-therapy, which constitutes the most scientific means of combating tetanus, may also be of great value in its local cure. A. Calmette infected wounds made on various parts of the body in ten guinea-pigs by a mixture of dust and earth containing fresh tetanic spores. While the control animals were seized with fatal tetanus in from four to six days, the ten which were treated two to six hours after infection with the application of dry tetanic serum to the wound remained immune. Professor Tizzoni from his experiments has proved that the local action of the serum is much more efficacious than its general action, and he advises always that injections of antitetanic serum should be made as near as possible to the wound. When the wound is open he recommends plugging it with gauze soaked in the serum so as to attack more deeply and directly the parts first assailed by the poison.

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[1] Reports on Public Health and Medical Subjects, No. 98. London: Wyman and Sons, Fetter-lane; Edinburgh: H.M. Stationery Office; Dublin: E. Ponsonby. Price 8*d*.

THE LESIONS OF THE THYROID GLAND IN GRAVES'S DISEASE.

THE April number of the new *Annales de Médecine* contained an instructive paper on the lesions of the thyroid gland in exophthalmic goitre by Dr. Gustave Roussy and Dr. Jean Clunet of Paris, which it is not too late to introduce to our readers. It serves to illustrate the difficulty of determining the significance of morbid changes and of "following the trail" where these lesions are multiple and multiform. It has often been taught that no histological criterion exists whereby to distinguish between simple goitre and exophthalmic goitre; chronic inflammatory changes, sclerosis, colloidal alterations, adenoma, and interstitial haemorrhages are described as occurring in either. In this paper, which is based on a considerable number of personally observed cases, the writers show that in exophthalmic goitre the lesions are of three types. 1. Epithelial hyperplasia, exactly comparable to what they have seen as compensatory hyperplasia in the thyroid of dogs, following on experimental incomplete thyroidectomy. The hyperplasia is recognised by the presence of cylindrical cells, overgrowth of acini, and pale, ductile colloid. It is only in exophthalmic goitre and experimental compensatory hyperplasia that these histological changes are found spreading over the whole gland; in senile thyroid sclerosis and in slowly progressing simple goitre they may be found in small local isolated patches; hence, if not strictly specific, their extension over the gland is highly characteristic. 2. Little islets of eosinophil cells are found in a very large percentage of thyroids in exophthalmic goitre and are regarded by the writers as forming an important cytological feature of the disease. 3. Masses of lymphoid cells are extremely common in exophthalmic goitre, but not specific; they occur exceptionally in other forms of thyroid inflammation and in other goitres, but never to the same extent as in Graves's disease. These latter cytological alterations are not present in experimental compensatory hyperplasia, a fact which suggests that in Graves's disease the condition is not so much one of simple hyperplasia as of dyshyperplasia. As for the vexed question whether the affection is a primary disease of the thyroid gland, the attitude of the writers is that the disease is primary in the thyroid, and that visceral, nervous, and muscle changes found at necropsy, especially those of the sympathetic, are secondary lesions due to the action of thyroid toxins, with the exception, however, of alterations of the thymo-lymphatic system. The suggestion is put forward that these are of some importance in the production of the syndrome and that they are the direct sequel of the infection originating the whole morbid process. As long as this infective element is in process of evolution, sodium salicylate, quinine, arsenic, and mercury are of value in treatment. Once the dyshyperplasic state has set in "hémato-éthyroïdine" and Mœbius's serum are useful. Partial thyroidectomy is of less value than slow progressive experimental atrophy, which can be produced satisfactorily by radiotherapy.

TUBERCULOUS BRONCHIAL GLANDS IN CHILDHOOD AND ADULTS.

THE different types of pulmonary tuberculous infection in children and adults are, of course, familiar—how, in the former, gland infection dominates the clinical picture, and how, in adults, the general lung parenchyma mainly suffers. The explanation of the cause of this difference is not simplified by the later researches of Kuss, Albrecht, and Ghon, which suggest that, even in children, bronchogenous infection is the rule, and that the initial lesion in them is not primarily glandular, but situated in the lung. The claim that the glandular infection is explained by the different route of the tubercle bacilli in children is thus opposed by these researches. If, then, at both ages the path of infection is similar, why is the site of the lesion so different in each? Dr. E. Rist[1] records some pathological observations which help to throw light on this question. In the first place, he finds that post-mortem examinations on adults, who when young had gland infection, now show no evidence in the bronchial glands of the past disease; and, further, both in these cases and in adults who suffer from pulmonary tuberculosis *de novo* the glands are but little affected, and this even if there has been a long phase of caseating lung tuberculosis preceding death. Again, the glands show in such cases no abnormal macroscopical appearances. Microscopically, true, there may be small evidences of gland transformation indicative of the past infection, but such hyaline degeneration does not prevent the rest of the gland from reacting to the later infection. And that they can so react is shown by their inflammatory response to such a condition as pneumonia. That they do not so respond to added tuberculous infection shows that their manner of response has in some way been specifically altered. Dr. Rist suggests from these facts that this freedom of glandular response to tuberculous infection is an obvious illustration of what Professor von Pirquet calls allergy. It is the same condition which protects the mucous membrane of the mouth and tongue of the consumptive patient against tuberculous infection; and, similarly, the skin. Caseation of the bronchial glands, then, on this showing, is not a specific character of childhood, but of primary tuberculous infection. If, on the other hand, pulmonary tuberculosis of the adult is, as a rule, not associated with such a condition, it is not because the lymph glands of the adult are different from those of the child, but simply because pulmonary tuberculosis of the adult is due to a *re*-infection, and the glandular response thereto has been altered. The argument is of considerable interest.

SIR WILMOT HERRINGHAM, M.D., Vice-Chancellor of the University of London, will take the chair on Tuesday next, Oct. 20th, at 8.30 P.M., at the first of a series of six lectures on "Louvain and its University," which will be delivered in French at University College by Professor L. Van der Essen.

THE Harveian oration will be delivered before the Royal College of Physicians of London by Sir Richard Douglas Powell, Bart., at 4 o'clock precisely on Monday next, Oct. 19th.

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[1] Edinburgh Medical Journal, 1914, xiii., 215.

THE CLAIMS OF BRITISH SPAS.

(*Continued from p. 863.*)

III.—HARROGATE.

THE name of Harrogate will always be associated with its evil-smelling sulphuretted hydrogen waters, in spite of the very important developments which have been made in regard to methods of treatment which are independent of the use of those waters.

The sulphur waters of Harrogate are unique in composition; their exact equivalent is not to be found on the continent nor among other sulphur springs known in this country, as at Strathpeffer in Scotland and Llanwrtyd and Llandrindod in Wales. The quantity of sulphur present either in the form of sulphuretted hydrogen or of sulphide of sodium exceeds that of such well-known sulphur waters as Aix-la-Chapelle or Baden. Abroad, however, the sulphur springs are generally thermal, while those at Harrogate are cold, and this fact probably accounts for their superiority in sulphur constituents. The old sulphur well at Harrogate contains no less than 37 cubic centimetres of sulphuretted hydrogen (H_2S) per litre and 0·07 gramme of sodium sulphide. There are present also 12·7 grammes of sodium chloride and distinct quantities of barium chloride, which in view of the powerful action of this salt cannot be disregarded. Not all the springs show this composition, and there are no less than 80 mineral springs at Harrogate, of which 16 or 17 are used for internal administration and the remainder for bathing purposes.

Last year the completion of some important extensions to the spa establishments at Harrogate was accomplished, which promise to bring it into formidable competition with the health resorts abroad. A few facts will justify this conclusion. As we reported last year,[1] owing to the accommodation of this popular resort having become inadequate, a commodious annexe was completed which has proved a great convenience to its increasing patrons. In the height of the season no less than 2700 glasses of water were served each morning before 9 o'clock from the historic spring known as the old sulphur well. No less than a quarter of a million sterling has been spent on this hydropathic station during the past 40 years, and the returns of 1912 show that over 500,000 tickets were issued to water drinkers and 160,000 for treatment. There is a very interesting fact underlying the good medical work done at Harrogate. Not very many years ago the town of Harrogate was losing something like £2000 a year on its baths and wells, but the authorities did not let this discourage them, and they have been rewarded, for now there has been paid off in redemption of debt and in interest the handsome sum of £70,000, and at the same time £11,500 have been apportioned towards the relief of rates. These facts speak eloquently of the admirable efforts on the part of the authorities at Harrogate to bring the medical and social advantages of their health centre into the sphere of public patronage enjoyed by watering places abroad.

The nucleus of attraction at Harrogate is a fine natural endowment of medicinal waters, and the cases for which they are suitable are well known. The treatment at Harrogate is applied to those cases which derive benefit at such places as Aix-la-Chapelle, Homburg, and Kissingen. Amongst the cases may be included chronic dyspepsia, constipation, congestion of the portal system, functional hepatic disorders, and so forth. Chronic gout and rheumatism receive relief from both internal treatment and a course of baths. No claim is made on the score of the natural waters being radio-active, though events tend to show this to be the case, and according to modern views it appears to be recognised that radio-activity is of undoubted assistance in promoting the therapeutic action of the naturally occurring chemical ingredients such as are found in Harrogate waters.

We have often pointed out that at our home health resorts treatment is too usually confined to the use of waters, whereas the régime insisted upon in continental methods enforces, in addition to a regular course of baths or of drinking the waters, a rigorous control over general and dietetic habits. This lesson, we believe, has been learnt at Harrogate, and, more than this, the strict routine so enjoined receives the relief required in the shape of social amusements in an environment of healthy air and attractive scenery. Harrogate may fairly be placed amongst the bracing watering places inasmuch as it is situated at an altitude of 600 feet or so above sea level, and the air is dry owing to the environment being free from woods, rivers, and lakes, the surroundings, in fact, being the well-known moors and dales of the West Riding. There is no doubt that treatment is well assisted at Harrogate, as at others of our health resorts, by favourable climatic conditions.

First-class facilities have been provided at Harrogate for extra hydropathic treatment. In addition, for example, to the variations in the methods of applying the natural waters, as in mud baths, sprays, irrigations, and internal administration, relief is offered by a great variety of electrical, thermal, and mechanical appliances. As we have previously reported, the appliances for electrotherapeutics are very complete. There is a fine installation of hydro-electric baths and every precaution is taken to make accident impossible. There is an independent electrical supply, and the baths are so insulated as to give a resistance to earth practically amounting to infinity. Every form of current is readily available. Static electricity is supplied by a high-speed ebonite plate machine, which is reported to give satisfactory results. High-frequency electricity is obtained from about half a dozen sets of apparatus in various parts of the station. It is used through vacuum electrodes for a variety of conditions, for the production of ozone, and for bipolar massage, a form of treatment that has given good results at Harrogate. Diathermy is in full employment and the results are encouraging. Then there is the apparatus for the treatment of obesity by the method suggested by Bergonié. A faradic current is employed, and by means of several electrodes distributed over the body according to a definite scheme, the principal muscles are made to go through a series of rhythmic contractions against a load that is adjustable by the use of sandbags. Exercise is thus obtained without fatigue, and a loss of weight is observed from the beginning of the treatment as well as an improvement in general health. The installations at Harrogate include complete equipments for Berthollet treatment, sulphur and needle baths, the Plombières bath and douche, Vichy massage douche, the liver pack, the oxygen bath, the Schwalbach bath (natural ferruginous water), the brine bath, inhalation systems, throat sprays, nasal douche, radiant heat and light treatment, cataphoresis, massage, and, in fact, all the accessories which are now recognised as forming part of the scientific equipment of an establishment claiming to be progressive in the different branches of hydropathic practice.

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[1] THE LANCET, June 14th, 1913, p. 1685.

Finally, the social attractions at Harrogate are well organised, and the medical routine is relieved by recreations provided in sports and in a well-appointed concert hall and theatre and other places of amusement.

Harrogate, in short, furnishes a decisive answer in the affirmative to the question as to whether these things can be done at home in the same efficient manner as is the case abroad.

"THE LANCET" HYGIENIC TESTS FOR GAS FIRES.

WE continue to receive from well-known makers of gas fires models for submission to THE LANCET test for hygienic efficiency. The spirited way in which the industry has taken the matter up, and its determination to render this method of domestic heating free from hygienic reproach, are very satisfactory, and we are glad to have played a part in the work. But we do not forget, and have pointed out before, that much to their credit the movement was begun by a firm of gas-fire makers—namely, Messrs. Davis and Co., of Luton, who introduced the shadowgraph, an apparatus designed for detecting the escape into the room of water vapour from the fire. Its action depends upon the deposit of moisture upon cooled glass brought in front of the canopy of the stove.[1] This invention has done excellent service, and it inspired the introduction of another test which was devised in THE LANCET Laboratory. The test is a chemical one and admits of simpler execution. It consists in allowing a small amount of carbon-tetrachloride vapour to flow into the gas-air stream. A piece of chalk soaked in carbon tetrachloride is simply placed near the air inlet. The result is that a correspondingly small amount of hydrochloric acid gas is produced. If now a piece of sponge containing liquid ammonia be brought to points along the canopy of the fire, fumes of ammonium chloride will be formed if the products of combustion are escaping into the air instead of passing through the flue nozzle to the chimney. We have now examined over 25 models by this method since our first report was issued, and every one of them has passed the test satisfactorily.

The following fires were recently sent in by Messrs. Fletcher, Russell, and Co., of Warrington, and 134, Queen Victoria-street, E.C.: (1) Rosario; (2) Palermo; (3) Toledo; (4) Borneo; (5) Dee; (6) Dart; (7) Dove; and (8) Dane. All the fires were of modern design, and not one showed leakage of products of combustion when submitted to the test. The test was made in the open room both with and without a 2-ft. flue attached. The 2-ft. flue was not found to be necessary.

The Planet Foundry Co., Limited, of Guide Bridge, near Manchester, and 28, New Bridge-street, sent in the following fires: (1) No. 2 New Mars; (2) No. 2 New Venus; and (3) No. 2 New Saturn. These are well designed fires and evidently constructed with hygienic considerations in mind, since they all passed the test satisfactorily in the open room without a flue attached. We should like to make the suggestion, however, that the maximum consumption of gas in these stoves might with advantage be increased in order to extend upwards the incandescence of the "radiants."

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on Oct. 8th, Sir W. WATSON CHEYNE, the President, being in the chair.

It was resolved, on the recommendation of the Museum Committee, to purchase the complete skeleton of an okapi.

It was reported that three attendants in the museum had enlisted and that the hall-porter had re-enlisted in the army, and it was resolved to pay them full wages for the next six months.

Sir RICKMAN J. GODLEE, on behalf of the committee on the annual report of the Council, submitted a draft copy of the report to be presented to the Fellows and Members at the annual meeting on Thursday, Nov. 19th next. The report was approved and adopted.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeon: P. M. May to the *Victory*, additional. Staff-Surgeon: A. F. Fleming to the *Victory*, for R.N. Division, Walmer. Surgeons: R. A. Rankine to the *Cyclops*, additional; K. H. Hole to the *Victory*, additional; and J. Barrett to the *Fisgard*. Temporary Surgeons: A. R. MacMillan, J. Rothwell, H. L. G. Foxell, P. B. Kelly, C. E. W. Lacey, A. A. Ballance, H. C. Waldo, and M. Onslow-Ford to the *Victory*, additional, for R.N. Division; H. G. Brown to the *Victory* for R.N. Division, Crystal Palace; L. R. Warburton to R.N. Division, Plymouth; C. Warner to the *Devonshire;* H. Wilks to the *Ganges;* and C. J. C. Faill to the *Victory*, additional.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel M. T. Yarr has been appointed Deputy Director of Medical Services for the London District.

Colonel Richard H. S. Sawyer is retained on the active list under the provisions of Article 120, Royal Warrant for Pay and Promotion, 1913 (dated Oct. 9th).

Major Harry A. Hinge to be Lieutenant-Colonel (dated Sept. 19th).

The undermentioned are granted temporary rank as follows whilst serving with the Duchess of Westminster's War Hospital:—Dated Sept. 27th: As Major: Charles Gordon Watson. As Captains: William Philip Sutcliffe Branson, Harold Pritchard, and Sydney Scott. As Lieutenants: John Southerden Burn and Dudley Macaulay Stone.

The undermentioned to be temporary Lieutenants:—Dated August 5th: Charles Ernest Lewis Burman. Dated Sept. 28th: Sydney Domville Rowland. Dated Sept. 30th: Lindsay Clive Smith, late Lieutenant, 4th Battalion, The Suffolk Regiment, Arthur Beeny Appleton, and Francis Caven Macdonald. Dated Oct. 1st: David Thomson, Eric Francis Wallace Mackenzie, Thomas Ebenezer Lawson, Frank Edwin Johnson, and William MacEwen. Dated Oct. 2nd: Charles George Lewis Wolf, Clayton Conyers Morrell, George Cuthbert Adeney, James Biggam, Cuthbert Scales, David Pottinger, John Richard Percy Allin, Leslie William Howlett, Wallace MacCallum Conley, and David Hardie. Dated Oct. 3rd: Richard Henry Cyril Gompertz, Arthur Baker Le Mesurier, Geoffrey Hadfield, William Alexander Todd, John McFadden, Robert Bertram Blair, Philip James Watkin, and Matthew Murphy. Dated Oct. 7th: Francis Frederick Muecke, John Nichol Clark, William Henry Laslett, Jeffery Wimpris Parker, and Malcolm Angus MacDonald. Dated Oct. 8th: Arthur Owen Playford Reynolds and Arthur Ainslie Hudson.

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[1] This apparatus was fully described in THE LANCET of Feb. 7th, 1914.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank: Joseph H. Baird, Clive A. Whittingham, John Alston, George H. Rossdale, and Robert Taylor. Second Lieutenant Phillip Jacob Gaffikin, from Princess Victoria's (Royal Irish Fusiliers) Special Reserve, to be Lieutenant.

The undermentioned Cadets and ex-Cadets of the Officers Training Corps to be Lieutenants (on probation): Albert Edward Woolfe Sandelson, John McKerchar, Walter Armstrong Elliott, and Trevor Braby Heaton.

The undermentioned to be Lieutenants (on probation): Frank Hutchinson Kennedy, Hugh Cochrane Storrie, and Thomas Graham Shand.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st London (City of London) General Hospital: Lieutenant-Colonel Sir Anthony A. Bowlby, C.M.G., to be seconded.

2nd London (City of London) General Hospital: Lieutenant-Colonel George H. Makins is seconded. Major Charles W. M. Moullin to be Lieutenant-Colonel.

South Wales Mounted Brigade Field Ambulance: Herbert Massingberd Pentreath to be Lieutenant.

1st Highland Field Ambulance: Captain John Hector Stephen and Captain Cuthbert D. S. Agassiz, from Attached to Units other than Medical Units, to be Captains. To be Lieutenants: Lieutenant James A. Morris and Lieutenant James E. G. Thomson, from Attached to Units other than Medical Units; and Daniel McDonald Grant and James Stewart McConnachie.

2nd Highland Field Ambulance: Lieutenant-Colonel Francis Kelly, from the Highland Clearing Hospital, to be Lieutenant-Colonel. Captain David Rorie, from the Highland Clearing Hospital, to be Captain. Quartermaster and Honorary Lieutenant Alexander Gibbon, from the Highland Clearing Hospital, to be Quartermaster, with the honorary rank of Lieutenant. Lieutenant Charles Cameron to be Captain. Lieutenants James A. Stephen, Alexander C. Mallace, and George Henderson, from Attached to Units other than Medical Units, to be Lieutenants.

3rd Highland Field Ambulance: Edwin Archibald Bell to be Lieutenant. Lieutenant Edwin Archibald Bell to be Transport Officer. Herbert Stuart Cleghorn to be Quartermaster, with the honorary rank of Lieutenant.

1st East Anglian Field Ambulance: Francis Ward (late Surgeon-Captain, 1st Volunteer Battalion, Suffolk Regiment) to be Captain.

2nd South Midland Field Ambulance: Albert Edward Peel McConnell to be Lieutenant.

1st West Riding Field Ambulance: Captain Harry B. Sproat, from Attached to Units other than Medical Units, to be Captain.

3rd West Riding Field Ambulance: The under-mentioned Captains to be Majors: James Mackinnon, Ernest Frederick Finch, and Charles Graham Murray. Lieutenant William N. W. West-Watson, from Attached to Units other than Medical Units, to be Lieutenant.

Eastern Mounted Brigade Field Ambulance: John Morgan O'Meara to be Lieutenant.

1st Home Counties Field Ambulance: Captain Joseph Ward to be Major. Arthur Thomas Falwasser to be Captain.

2nd Home Counties Field Ambulance: Lieutenant Bernard R. Billings to be Captain.

1st East Lancashire Field Ambulance: Lieutenant (Transport Officer) George Robinson Wattleworth, from Manchester Companies, Royal Army Medical Corps (Volunteers), to be Transport Officer, with the honorary rank of Captain.

2nd East Lancashire Field Ambulance: Lieutenant (Transport Officer) Charles Gordon Stoddart, from the Manchester Companies, Royal Army Medical Corps (Volunteers), to be Transport Officer, with the honorary rank of Captain.

Wessex Clearing Hospital: Major Clarence I. Ellis to be Lieutenant-Colonel.

Highland Clearing Hospital: Lieutenant-Colonel Alexander Ogston, from the 2nd Highland Field Ambulance, to be Lieutenant-Colonel. Quartermaster and Honorary Lieutenant James M. Munro, from the 2nd Highland Field Ambulance, to be Quartermaster, with the honorary rank of Lieutenant.

2nd London Sanitary Company: Lieutenant Percy N. Cave to be Captain.

Attached to Units other than Medical Units.—Captain John E. Molson to be Major. To be Captains: Captain Francis W. Goodbody, from the 3rd London General Hospital; Lieutenant Lee D. B. Cogan; and Cecil Arthur Ensor. To be Lieutenants: Cresswell Burrows, Humphry John Wheeler (late Surgeon-Captain, 1st Buckinghamshire Rifle Volunteer Corps), Francis Ryalls Eddison, Robert Evelyn Tissington Tatlow, and Herbert Connop.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8544 births and 4847 deaths were registered during the week ended Saturday, Oct. 10th. The annual rate of mortality in these towns, which in the three preceding weeks had been 15·1, 15·7, and 14·3 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year, further declined to 13·9 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·2, against a corresponding rate of 13·3 per 1000 in London. Among the several towns the death-rate last week ranged from 3·2 in Acton, 5·1 in Enfield, 6·2 in Gloucester, 7·8 in Lincoln, and 8·0 in Ilford, to 19·4 in Liverpool, 19·9 in Great Yarmouth, 20·2 in Warrington, 20·5 in Gateshead, and 21·1 in Southport.

The 4847 deaths from all causes were 119 fewer than the number in the previous week, and included 710 which were referred to the principal epidemic diseases, against numbers declining from 1437 to 877 in the three preceding weeks. Of these 710 deaths, 485 resulted from infantile diarrhœal diseases, 73 from measles, 57 from diphtheria, 47 from whooping-cough, 31 from scarlet fever, and 17 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·0, against 2·5 per 1000 in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 1223, 1004, and 651 in the three preceding weeks, further declined to 485, of which 123 were registered in London, 49 in Liverpool, 32 in Birmingham, 20 in Manchester, 19 in Sheffield, and 13 each in Stoke-on-Trent and Nottingham. The deaths referred to measles, which had been 64, 50, and 61 in the three preceding weeks, further increased to 73 last week, and included 24 in London, 5 each in Birmingham, Birkenhead, Liverpool, and Sheffield, and 3 each in Manchester and Newcastle-on-Tyne. The fatal cases of diphtheria, which had steadily increased from 31 to 63 in the eight preceding weeks, fell to 57 last week; 17 deaths occurred in London, 5 in Birmingham, 3 each in Liverpool, South Shields, and Cardiff, and 2 each in Tottenham, Wolverhampton, Burnley, and Middlesbrough. The deaths attributed to whooping-cough, which had been 50, 40, and 50 in the three preceding weeks, fell to 47 last week, and included 11 in London, 4 in Bristol, and 3 each in Bradford and Hull. The deaths referred to scarlet fever, which had been 27, 23, and 29 in the three preceding weeks, further rose to 31 last week, of which 4 were recorded in London, 3 each in Birmingham and Warrington, and 2 each in Manchester and Salford. The fatal cases of enteric fever, which had been 20, 16, and 23 in the three preceding weeks, fell to 17 last week, and included 2 each in London, Portsmouth, Warrington, Hull, and South Shields.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased from 3071 to 4196 in the seven preceding weeks, had further increased to 4363 on Saturday last; 670 new cases were admitted during the week, against 551, 674, and 640 in the three preceding weeks. These hospitals also contained on Saturday last 1412 cases of diphtheria, 67 of enteric fever, 34 of whooping-cough, and 30 of measles, but not one of small-pox. The 1192 deaths from all causes in London were 99 fewer than the number in the previous week, and corresponded to an annual death-rate of 13·8 per 1000. The deaths referred to diseases of the respiratory system, which had been 110, 140, and 157 in the three preceding weeks, further rose to 175 in the week under notice, and were 52 above the number in the corresponding week of last year.

Of the 4847 deaths from all causes in the 97 towns, 169 resulted from various forms of violence, and 364 were the subject of coroners' inquests, while 1479 occurred in public institutions. The causes of 45, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Hull, and in 68 other smaller towns. Of the 45 uncertified causes of death, 9 were registered in Liverpool, 7 in Birmingham, 3 in St. Helens, and 2 each in London, Southend-on-Sea, Nottingham, Blackpool, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1228 births and 698 deaths were registered during the week ended Saturday, Oct. 10th. The annual rate of mortality in these towns, which had been 15·9, 16·3, and 15·6 per 1000 in the three preceding weeks, rose to 15·9 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 14·4, against 13·2 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 10·2 in Kirkcaldy, 10·3 in Kilmarnock, and 11·0 in Falkirk, to 17·0 each in Paisley and Coatbridge, 18·6 in Aberdeen, and 20·7 each in Dundee and Greenock.

The 698 deaths from all causes were 11 in excess of the number in the previous week, and included 96 which were referred to the principal epidemic diseases, against 128 and 92 in the two preceding weeks. Of these 96 deaths, 54 resulted from infantile diarrhœal diseases, 14 from diphtheria, 13 from scarlet fever, 8 from whooping-cough, 6 from enteric fever, and 1 from measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·2, against 2·0 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had declined from 101 to 52 in the four preceding weeks, slightly rose to 54 last week, and included 26 in Glasgow, 10 in Dundee, 4 in Edinburgh, 3 in Aberdeen, and 3 in Clydebank. The deaths referred to diphtheria, which had been 4, 9, and 9 in the three preceding weeks, further rose to 14, of which 4 occurred in Aberdeen, 3 in Glasgow, 3 in Edinburgh, and 2 in Paisley. The fatal cases of scarlet fever, which had been 6, 12, and 12 in the three preceding weeks, were 13 last week, and included 6 in Glasgow, 4 in Aberdeen, and 2 in Dundee. The deaths attributed to whooping-cough, which had been 8, 13, and 13 in the three preceding weeks, declined to 8 last week, of which 6 were recorded in Glasgow. The deaths referred to enteric fever, which had been 3, 4, and 4 in the three preceding weeks, further rose to 6 last week, and comprised 5 in Glasgow and 1 in Greenock. The fatal case of measles occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 62, 64, and 71 in the three preceding weeks, further rose to 84 in the week under notice; 28 deaths resulted from various forms of violence, against 20 and 27 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 630 births and 355 deaths were registered during the week ended Saturday, Oct. 10th. The annual rate of mortality in these towns, which had been 19·9, 19·2, and 17·3 per 1000 in the three preceding weeks, declined to 15·4 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 16·9, against corresponding rates of 13·2 and 14·4 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 17·5 in Dublin (against 13·8 in London and 15·4 in Glasgow), 14·5 in Belfast, 12·9 in Cork, 12·7 in Londonderry, 21·7 in Limerick, and 22·8 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 12·3 per 1000.

The 355 deaths from all causes were 46 fewer than the number in the previous week, and included 53 which were referred to the principal epidemic diseases, against 92 and 53 in the two preceding weeks. Of these 53 deaths, 34 resulted from infantile diarrhœal diseases, 6 from whooping-cough, 6 from enteric fever, 4 from scarlet fever, and 3 from measles, but not one from small-pox or from diphtheria. The mean annual death-rate from these diseases was equal to 2·3, against 2·0 and 2·2 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 74, 71, and 41 in the three preceding weeks, further fell to 34, of which 14 were recorded in Dublin and 10 in Belfast. The deaths referred to whooping-cough, which had been 4, 9, and 6 in the three preceding weeks, were again 6 last week, and comprised 4 in Belfast and 2 in Cork. The 6 fatal cases of enteric fever were double the weekly average recorded during last quarter, and included 2 in Dublin, 2 in Belfast, and 2 in Ballymena. The 4 deaths attributed to scarlet fever, comprising 2 in Belfast and 2 in Waterford, were slightly in excess of the average recorded last quarter. The 3 fatal cases of measles occurred in Belfast.

The deaths referred to diseases of the respiratory system, which had increased from 35 to 58 in the four preceding weeks, fell to 56 in the week under notice. Of the 355 deaths from all causes, 107, or 30 per cent., occurred in public institutions, and 10 resulted from different forms of violence. The causes of 10, or 2·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

THE offices of the Medical Sickness, Annuity, and Life Assurance Society have been removed to larger premises at Lincoln House, 300, High Holborn, London, W.C.

THE BELGIAN REFUGEES: THE QUESTION OF THE PROFESSIONAL CLASSES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

AT the offices of the War Refugees' Committee in Aldwych I was favoured at the beginning of the week with a long interview by Lord Gladstone, who, as treasurer of the fund, has been unremitting in his efforts to organise the relief of the expatriated Belgians. What this means may be judged from the fact that the committee has by this time received at least 200,000 letters. Of these 20,000 contain offers of hospitality, and highly trained clerks have been employed in the work of indexing and keeping in order this voluminous correspondence. The allotting of refugees to the families that offer hospitality is a very delicate and difficult matter. The committee had already arranged for the reception of 3500 refugees when the figure of arrivals began to attain to more than 300 per day. This meant an influx too great for the committee to cope with, and the Government consented to take the matter in hand. The Metropolitan Asylums Board was ready to relieve the Refugees' Committee of the task of providing shelter for the new arrivals. 500 beds, food, and the necessary staff of attendants were made ready at the Edmonton Workhouse, an abandoned building which has now been refitted. A few days later the Metropolitan Asylums Board had 5000 beds ready, and the number can be increased. The rapidity with which this work was done was due in a great measure to the untiring efforts, continued night and day, of Mr. T. Duncombe Mann, Mr. G. A. Powell, and Mr. Kelly, clerk and assistant clerks to the Metropolitan Asylums Board.

The Need of Further Aid.

But it has to be borne in mind that this great assistance given to the War Refugees' Committee only applied at first to those who arrived in a denuded condition. By the end of September 7779 such refugees had been received, and the immense majority were of the peasant or agricultural labouring class. By the end of the first week in October the figure had reached at least 10,000, and the class of people coming over had begun materially to change. With the fall of Antwerp and the general German occupation of Belgium the refugees are now far more numerous and belong to all grades. Professional men and the aristocratic classes are largely represented, while it is certain that hospitality will have to be found for at least 100,000 persons at once. On the position of some of the better-class refugees Lord Gladstone spoke to me very earnestly. An increasing proportion of the refugees are highly educated, refined gentlemen and ladies who held good positions in their own country. Some were professors at universities or school teachers, doctors of law or of medicine, landowners, business men, shopkeepers, and even large employers of labour. Yet many of them when they arrived were absolutely penniless, and for the time being at least were so cut off from their homes and usual pursuits that they could not get any money. It is not possible to send them to sleep on a straw mattress laid on the floor of an abandoned workhouse, and vast efforts at better accommodation must be made. It is true that bedsteads are now coming in at the rate of 1000 per week, and that the mattresses have no longer to be put on the bare floors, but the general arrangements necessarily remain rudimentary from the modern point of view. Among the recent refugees, for instance, there was a judge of the Belgian High Courts, and many similar cases have been discovered, but they cannot all be recognised, and we may be sure that some of our unfortunate guests are not getting the reception we should all wish to give them.

The better class refugees are sent to hotels, where special terms have been made by the committee, and they receive board and lodging for 4*s.* 6*d.* to 5*s.* per day. It is obvious, however, that there is a limit to the funds the Refugees' Committee has collected. The opinion of the hospitality offered by the British nation to the Belgian people will be formed by the educated classes and not by the poor peasants accustomed to hard circumstances in their living. For the latter something akin to workhouse accommodation may fairly suffice—it is all we can offer our own destitute; but the educated classes who are momentarily in the situation, financially speaking, of paupers are entitled to expect other treatment. We must all try to see that they get it.

An Appeal to Medical Practitioners.

In these circumstances the Government must raise the scale of money allowance granted per head when dealing with people who are not paupers but refugees. The nation, there can be no sort of doubt, is anxious that the very best should be done so that our brave allies, who have suffered so terribly for their loyalty to their guarantees, may feel thoroughly satisfied with what British hospitality can do, little as it must be in comparison to their gigantic losses and miseries. In this the members of the medical profession can render signal service in Lord Gladstone's opinion. They have so wide a circle of acquaintances that it would be comparatively easy for them to discover families willing and able to offer hospitality to the better class of refugees. Since the fall of Antwerp the latter have been arriving in great numbers. Some 25 interpreters are at the stations to meet them, but when several hundred refugees disembark simultaneously some perforce have to wait. Fortunately, at Charing Cross and Victoria stations special inquiry offices and waiting-rooms have been provided. A meal is procured by the committee's agents, or a night's lodging is given, or a railway ticket to join some friend who is expecting the wayfarers, but there is not money enough to continue such help indefinitely. That is why no time must be lost in sending in offers of hospitality. Even with such help the question arises whether the Government will not have to organise a refuge of a higher class than the Alexandra Palace or the discarded workhouses where some of the expected crowds may be sheltered on a collective plan.

The Metropolitan Asylums Board is looking after the poor very well, considering the immense difficulties of the task. The trouble now is in regard to the rapidly increasing flow of refugees belonging to the higher classes, who could well be entertained as guests by the similar class in this country. The medical practitioner is in a good position to know who would be able and willing to lend such aid, and should communicate any information that may be of service to the War Refugees' Committee in Aldwych.

CANADA.

(From our Own Correspondent.)

Infant Mortality in Toronto.

The Department of Health, Toronto, has inaugurated a Division of Child Hygiene with Dr. Alan Brown and Dr. George Campbell as directors. With a population of 510,000 Toronto has 10,960 children under 1 year of age and 21,070 under 2 years of age. To care for these in times of sickness there are the following institutions. The Hospital for Sick Children, with a capacity of 250 beds, the baby ward containing 30 cots. This hospital has a well-equipped pasteurising plant capable of dealing with 150 gallons a day. Seven milk depôts throughout the city receive their supply from this source. The Infants' Home and Infirmary takes care of destitute children. For the year ending Sept. 30th, 1913, this institution took care of 289, of which 76 babies died during that year. Infants are no longer cared for without their mothers. St. Vincent's Home cares for destitute foundlings and illegitimate children and has an average of 100 cases in residence. The Haven and Prison Gate Mission last year furnished accommodation for 61 infants, 58 being illegitimate. The Sacred Heart Orphanage has an average number of 200 inmates. There are 42 licensed baby homes and 12 maternity homes under the supervision of the Department of Health. Four of the public hospitals maintain maternity wards and 1260 children were born there during the past official year. Four visiting nursing agencies do the bulk of the obstetrical work of the city; there are eight day nurseries or *crèches;* eight agencies carrying on settlement work; two women's organisations provide an ice fund; numerous private organisations for food and clothing; while there are six local organisations coördinating these philanthropies and preventing overlapping. Within a few hours of the reporting of a birth in the city one of the public health nurses, of whom there are 31, visits the home and investigates the surroundings of the child. If a doctor is in attendance nothing further is done; otherwise the mother is directed to bring her baby to a "well-baby clinic," of which there are ten. The appointments to these are made by the professor of pædiatrics of the University of Toronto and the medical officer of health. In 1915 it is expected to increase the number of these to 25, as it has been found essential to have one of these clinics to every 20,000 of the population. The Toronto Ferry Company supplies a floating sanatorium, and about 300 babies and mothers are taken out on each trip. A wet-nurse bureau is being established in connexion with the Division of Child Hygiene. In 1897, with a total population of 197,000, the infant mortality under 1 year from all causes was 664; in 1913, 1877.

The Prevention of Tuberculosis in Nova Scotia.

The Provincial Sanatorium at Kentville, Nova Scotia, is for early pulmonary tuberculosis cases and was established by the Government of that province in 1904. A weekly fee of $5 must be paid in advance. The balance to maintain the institution comes from governmental aid. Dr. A. F. Miller, the medical superintendent, in his ninth annual report states that during the hospital year ending Sept. 30th, 1913, there were 64 applications for admission, and of these 38 were accepted. At discharge 23 of these cases were apparently cured, 11 arrested, 2 improved, 2 only failing to respond to treatment. Two extra pavilions were added in the year with accommodation in each for 16 patients. Accurate records have been kept since 1910. Since that time 94 patients have received treatment; 59 of these are now working and well, 19 not working, 15 dead, and the condition of 1 unknown. There is great need in the province for free hospitals to which needy patients may go. The institution aims to help in the diagnosis of all cases in that province.

Toronto, Sept. 5th.

Correspondence.

"Audi alteram partem."

THE GOVERNMENT GRANTS FOR MATERNITY AND CHILD WELFARE.

To the Editor of THE LANCET.

SIR,—Your leading article of Sept. 26th has drawn attention to the admirable scheme of the Local Government Board as regards "Maternity and Child Welfare" issued as a memorandum last July. Its object is to link together the existing organisations and to organise new ones dealing with these subjects. Arrangements are to be made for: (1) Efficient *antenatal* advice and treatment by antenatal clinics, home visiting, and pre-maternity beds or wards; (2) for skilled attendance upon women during their confinements, and expert hospital treatment for parturient women with contracted pelves and other abnormalities or diseases; and (3) for treatment of mother and child after parturition, and subsequent systematic advice and treatment for infants and older children at suitable clinics or dispensaries, and by home visiting.

It will not be easy to link together all these agencies into a smooth efficient working scheme, but as the whole nation seems now alive to the value of infantile life and maternal welfare I feel sure it will eventually be accomplished.

To enable local authorities to form and extend the necessary organisations, the Local Government Board propose to give grants up to 50 per cent. of the approved expenditure of the more clinical and medical portions of the scheme, and similar grants from the Board of Education will be forthcoming for approved instruction, such as can be given on general lines in "schools for mothers," home visits, and by other kindred agencies. Personally, I see no reason why a hospital should not apply for a grant in aid of the expenses involved in the formation or extension of a definite antenatal clinic and laboratory with pre-maternity beds, for beyond the approval of the Local Government Board it would not involve, as I understand the scheme, any State supervision or control.

"Schools for mothers" will be developed through voluntary agencies or by local health authorities, and pregnant women will be there generally instructed in antenatal and natal hygiene, and if in any way thought to require help would be advised to consult either local practitioners of their own choice at an adjacent "maternity centre" or go to an antenatal clinic at a convenient general or lying-in hospital.

It is here where I think obstetricians all over the country can usefully help to make this scheme a success, whether they apply for the Government grant or not. At every such hospital where maternity cases are registered for attendance, an antenatal clinic is practically in existence, and has only to be extended to make its presence of immense service, not only to the women and unborn infants, but also to the students attending the clinics. Every such clinic should be in touch with a well-equipped laboratory. In such a clinic students would be taught how to recognise early toxæmia by urine testing and by clinical evidences, and they would be instructed in abdominal palpation and auscultation and the detection of pelvic abnormalities, and would learn the prophylaxis and treatment of the toxæmias and other complications of pregnancy.

Pregnant women in the general wards or in other out-patient departments of the hospital, with varied medical or surgical complications, could be notified to or transferred to the antenatal clinic, and a great mass of useful knowledge thus obtained. Occasional lectures could also be given. In some hospitals all this is already being done. In others, women are registered by the resident accoucheur, and but little effort is made to instruct students in a department of medicine now recognised to be of the greatest importance. Such a clinic should be distinct from the ordinary gynæcological out-patient department, so that students may realise that it is a special branch of study, and worthy of being treated as such, and the patients themselves would be in greater comfort and privacy.

This is the first time that any Government body has taken up the question of antenatal hygiene, and as it is the direct result of the importance now attached to the subject by medical men we should give it every support.

I am, Sir, yours faithfully,
AMAND ROUTH, M.D. Lond., F.R.C.P. Lond.
Manchester-square, W., Oct. 13th, 1914.

THE TREATMENT OF TETANUS.

To the Editor of THE LANCET.

SIR,—At a time when, unfortunately, tetanus is so common amongst those returning wounded from the front it seems advisable to direct attention to a form of treatment successfully employed by Mr. Oliver Atkey in a severe case at Khartoum. His paper appeared in THE LANCET of Jan. 18th, 1913, and the method consisted in producing general anæsthesia by the intravenous injection of a mixture of ether and paraldehyde given in normal saline solution. It was based upon the work of Noel and Souttar as regards the production of general anæsthesia. Their results will be found recorded in a paper published in THE LANCET of Sept. 21st, 1912.

I remember that in Mr. Atkey's case the tetanus bacillus was found, so that there can be no doubt as to the diagnosis, although, as a matter of fact, this presented no difficulties, for the case was a typical one. The initial dose was 5 c.c. of each drug in 150 c.c. normal saline, but this was increased later to 15 c.c. of ether and paraldehyde respectively, repeated from time to time. Mr. Atkey states that if he had another case to treat he would give larger doses. Considerable quantities of normal salt solution were also infused in order to rid the system as far as possible of the tetanus toxin.

Of course in tetanus antitoxin is our sheet anchor, but it is not always available, and very often it cannot be given in time. It therefore seems to me that Mr. Atkey's method merits a trial. It could conceivably be employed along with serum injections, but in the light of recent work by von Graff-Menochikoff this is open to doubt. It seems fairly free from danger, pulmonary œdema being the complication which has to be feared, but in tetanus one must take risks, for, as a rule, an untreated patient has little chance of recovery.

Mr. Atkey claims the following advantages for his method: 1. Very rapid anæsthesia. 2. The production of hypnosis as well as anæsthesia. The patient's strength is husbanded, pain is greatly lessened, and time is afforded for the absorption of nourishment and the employment of such other remedial measures as may suggest themselves. For similar reasons hedonal might be found useful. So far as I know it has never been employed in tetanus. Possibly, however, ether and paraldehyde are safer, though hedonal anæsthetisation has its advocates, and it certainly produces a marked muscular relaxation.

I am, Sir, yours faithfully,

Henrietta-street, W., Oct. 9th, 1914. ANDREW BALFOUR.

THE PREVENTION OF TETANUS.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Oct. 3rd, p. 861, occurs a statement that cannot pass without comment. The statement is that the use of antitetanic serum "as a prophylactic remains yet to be more conclusively established." But its efficiency as a prophylactic has assuredly already been conclusively established. I am certain that if every wounded soldier collected by our ambulances received a prophylactic injection within 24 or 48 hours of the receipt of his wound we would not have a single case of tetanus. Instead of that we have the mortification of seeing reports of such cases each week. The evidence will be found in many experiments recorded. I need only mention two.

1. A horse infected with tetanus by Mohler and Eichorn died from tetanus within nine days. Of seven other horses infected at the same time with the same dose, and given antitetanic serum from 48 to 96 hours afterwards, not one died; two developed symptoms of tetanus but recovered. "From the results of these investigations it may therefore be concluded that 500 American units is a sufficient dose of antitoxin for use as a prophylactic even in cases where the infection has occurred four days prior to the injection of antitoxin."

2. In America, as a result of wounds received from explosions of fireworks during the "4th of July" celebrations, many cases of tetanus used to occur every year. In 1903, the first year when a strong effort was made to secure complete statistics, 406 deaths from tetanus occurred. The American Medical Association through its journal then started a campaign impressing on medical men the necessity of the prophylactic use of antitetanic serum in every case of burns and wounds. The cases have gradually dropped each year until in 1912 only six deaths occurred. The editor of the journal says: "We have made extensive inquiries into the treatment received by those injured in the '4th of July' accidents, and have yet to learn of a single case in which tetanus developed in a person who had early received a prophylactic dose of antitoxin." I am, Sir, yours faithfully,

Oct. 6th, 1914. A. T.

IMPERFECTIONS IN THE CUMBERLAND INFIRMARY.

To the Editor of THE LANCET.

SIR,—It is not apparent why Mr. H. A. Lediard, the senior surgeon, should have written the letter published in THE LANCET of Oct. 10th. My report on the Cumberland Infirmary relates mainly to administrative and domestic matters and only indirectly, if at all, to things medical. Hence the theatre, though not overlooked, claimed no special mention.

It is impossible for anyone to understand the questions raised unless my original report[1] is before them. That report was written as the result of requests made to me in August and October, 1909, by the chairman of committee and by an eminent member of the honorary medical staff. The latter enclosed in his letter a block plan of the whole of the infirmary, including the new extensions then in progress. It was not possible to comply with the request made earlier than June 20th last. I have always been interested in the welfare of the Cumberland Infirmary, having known several of its officers who have made high reputations and have risen to important positions in the hospital world. This feeling, and the letters just referred to, made me if possible more than usually anxious to make my report contribute to the bringing up of this important institution to the standard of an up-to-date modern hospital. I pointed out that "structurally the institution has been transformed for the better," but "administratively it has been changed sadly for the worse." That is what I found in the fewest possible words.

I have felt it to be a public duty to raise the following pertinent questions which go to the root of the matter. Has the personnel or character of the committee changed materially during the period in question? Has there been a gradual elimination of the former principles which led some of the most distinguished residents within the county to take an active part in the management? Has there been substituted for this element a large and increasing number of less responsible persons who have narrower views and are inclined to run the institution more on a sectarian or narrow basis? Is there an influence in the hospital which has been gradually acquired over all the departments by some one who has not a large and generous spirit, and who may, from many years' association, have got the affairs of this institution too much into his own hands? It remains to be seen whether the committee and governors of the Cumberland Infirmary will unite in an effort to make the administration of the infirmary up to date and smartly efficient.

In my report I suggested there was urgent need for an independent investigation at Carlisle, and the letter from Mr. Lediard confirms the practical value of this recommendation. There is evidence that Mr. Lediard and the infirmary authorities do not appreciate the responsibility of providing adequate recreation-room accommodation for the large staff of laundry-maids they employ. Further, that they do not realise the effects of the working of the present system of administration, which I emphasised and have good grounds to condemn. The question of a garden, and all I urged in regard to it, are not matters of appreciable cost but of sound management, and point to lost opportunities for expediting the recovery of the patients. The Cumberland Infirmary contains 140 beds, and Mr. Lediard's description of it as "a small provincial hospital" is, therefore, inaccurate. My criticisms rest upon the standard attained by a modern up-to-date hospital, whilst Mr. Lediard appears to be content with something infinitely inferior to it.

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[1] See The Hospital, Sept. 19th, 1914, p. 677.

Mr. Lediard's letter is no answer to my report. He accuses me of "certain inaccuracies which mar the trustworthiness of his [my] statements," to wit, that the reconstruction has included (1) a new ophthalmoscopic room and (2) a new clinical room for ward work. He describes the former as a completely equipped ophthalmic department, and declares the latter has not yet been acquired. I must remind Mr. Lediard that the lithograph plan supplied to me from the infirmary contains the additions and alterations signed by the architect, and states on its face that these include D, a new clinical room, and K, a new ophthalmoscopic room. The inaccuracies, if inaccuracies there be, are therefore not mine, and if they mar the trustworthiness of any statements, as Mr. Lediard declares, they cannot be the statements in my report.

For the rest Mr. Lediard ignores the pertinent questions which my report contained, and contents himself by writing at length and at large in the apparent attempt to draw a herring across the scent. He declares and continuously insists that "we know how to adapt our expenditure to our means," an assertion which, for reasons set forth clearly in my report, I beg leave to question. He has evidently to learn, with others, the importance in hospital administration to remember "there is that spendeth and yet increaseth."

In endeavouring to secure a thorough and impartial inquiry in the best interests of the future of Cumberland Infirmary I am handicapped by the apparent general apathy, due possibly to the absence of a local daily newspaper. Mr. Lediard inferentially implies that I have attacked the committee of management, and have found something wrong with the matron, Miss Sylvia Parker. So far from attacking the committee, I have merely urged them to make certain changes in the internal management, and to take steps to secure an independent report by a hospital expert of wide experience. Miss Sylvia Parker has had a most difficult task, and has shown much devotion in her efforts to secure good management under conditions which I venture to think ought never to have existed. They, too, should have been removed before she entered upon her office.

For the rest I commend the present administrative working of the Cumberland Infirmary to the attention of the governors and the committee of management, with the expression of an earnest hope that they will adopt the course recommended in my report, because it should result in increasing the infirmary's resources and bringing its administration in future nearer to the standard of a modern up-to-date hospital.

I am, Sir, yours faithfully,
HENRY C. BURDETT.

Porchester-square, W., Oct. 10th, 1914.

To the Editor of THE LANCET.

SIR,—Sir Henry Burdett seems to have been invited by the chairman of committee and by an eminent member of the honorary medical staff to visit and report on the condition of the Cumberland Infirmary in the year 1909. I raise no objection to this desire for an outside opinion, but some astonishment must have been occasioned when Sir Henry Burdett, like Balaam, does exactly the opposite of what was expected of him: "I called thee to curse mine enemies, and behold, thou hast altogether blessed them these three times." No doubt Sir Henry Burdett's report of the unsatisfactory state of the Cumberland Infirmary has been somewhat disappointing to whoever gave him the invitation.

"It remains to be seen whether the committee and governors of the Cumberland Infirmary will unite to make the administration of the infirmary up to date and smartly efficient," says Sir Henry Burdett on Oct. 10th in the *Hospital*, and so it would seem that the administration is the real point of attack after all, and why does not Sir Henry Burdett leave innuendoes and boldly state what he believes to be wrong? He now tries to whitewash the committee of management and declares that the matron, Miss Sylvia Parker, is worthy of his approval, but what is the "internal management" which "ought never to have existed" and "should have been removed before she entered upon her office"?

I never heard that Miss Sylvia Parker had been hampered by any "internal management"; in fact, I can assure Sir Henry Burdett that there is more harmony and less friction in the Cumberland Infirmary since Miss Sylvia Parker became matron three years ago than there had been for many years previously. Who is the individual aimed at who has "got the affairs of this institution too much into his own hands?" asks Sir Henry Burdett, and I ask Sir Henry Burdett to be frank and say whether or no he does or does not attack the secretary. I can assure Sir Henry Burdett that he has been misled and that the secretary enjoys the full confidence of the committee and has in no way "got the affairs of the institution too much into his own hands." I think that Sir Henry Burdett, if he is attacking the secretary, is sailing a bit near the wind for his own safety, and it appears with absolute clearness that his remarks are resting upon information supplied to him by someone who has an axe to grind.

For his second report in the *Hospital*, Oct. 10th, Sir Henry Burdett remarks: "There is evidence that Dr. Lediard and the infirmary authorities do not appreciate the responsibility of providing adequate recreation-room accommodation for the large staff of laundrymaids they employ." I desire, without any boast, to point out that I raised the question of the need of placing the kitchen and wardmaids above ground instead of their subterranean sleeping-rooms when there was a discussion at the Carlisle Town Hall over the building scheme then in prospect, and I am no less interested in provision being made for our four laundrymaids. Sir Henry Burdett's idea of a large staff of laundrymaids seems to amount to four persons. I have inspected the room the four laundrymaids have for a sitting-room and find it small but adequate so long as it is not invaded by any more.

Sir Henry Burdett objects to my considering the Cumberland Infirmary a "small provincial hospital," and in his report of Sept. 19th he credits us with having 150 beds, but in his Oct. 10th report he drops down to 140 beds, and even then he is in error. There are 100 beds in the hospital in use and have been in use since 1875, but the extensions and ward building recently completed was planned for 130 beds. In spite of the show we have made there are 30 beds still vacant because we have insufficient funds to allow of their being occupied except in an emergency, and these vacant 30 beds have been offered for wounded or sick men from the front by the Red Cross people to the War Office. No one "in the know" can complain that there has been any marked economy in the construction of the new building recently erected, for the palatial dining-room for nurses, the library and vast drawing-room, to say nothing of a large glass-roofed conservatory—all reminding one of a modern hotel—to be found in the nurses' quarters, indicated that expenditure has been lavish; at any rate, it has been so in my opinion.

With regard to Sir Henry Burdett's statement that "a new clinical room to each ward" had been provided, I acquit him of the error, because it was supplied to him on the plan sent to him from the infirmary, but had he been as familiar with the working of a provincial hospital as he would have us believe, he would have recognised the absurdity of a "clinical room to each ward."

There is one passage in Sir Henry Burdett's reply of Oct. 10th which is beyond my comprehension. He says: "I am handicapped by the apparent general apathy, due possibly to the absence of a local daily newspaper." How can the presence or absence of a local daily newspaper influence the "apparent general apathy"? Probably a well-conducted local daily newspaper is an advantage everywhere, but even newspaper proprietors, like hospital managers, are subject to funds for carrying on their business, and if the apathy in the Cumberland Infirmary is to depend "possibly on the absence of a local daily newspaper," I fear we shall be apathetic for many years to come.

Sir Henry Burdett's standard of a modern up-to-date hospital is quite a pleasing one, and includes a series of articles which he considers we now want. Flock pillows are bad, books with readable type needed, a view room in the mortuary, teak floors disappointing, central fireplaces consuming too much coal, &c. These items are not worthy of controversy, but they show how much detail came under Sir Henry Burdett's eye. Does Sir Henry Burdett know that teak is a wood obtained from Burma and has a superior resistance to insect life? Did Sir Henry Burdett actually see the two stoves at work which he complains of as being cheerless and affording insufficient heat? As to a "view room" in the mortuary, which place he thinks has been "erected on a defective plan," what is a "view room"? Perhaps Sir Henry Burdett will instruct me.

If left to himself I feel sure that Sir Henry Burdett means well and is sincere in his desire for improvement in the Cumberland Infirmary, but when he begins to talk about "something wrong somewhere," "little or no spirit or life in the place," "diminished efficiency," and the like hasty deductions, a doubt arises as to his whole report of Sept. 19th. I grant that I have much to learn and will gladly learn from Sir Henry Burdett, but he must write in a different spirit, and report trustworthily, before I can sit at his feet and gather information of the royal road to hospital management, and when he makes himself the mouthpiece of what he has picked up outside the Cumberland Infirmary he damages any reputation he may have for accuracy and good judgment.

I am, Sir, yours faithfully,

Carlisle, Oct. 12th, 191 . H. A. LEDIARD.

⁂ Mr. Lediard's letter is written in answer to a statement in the *Hospital* of Oct. 10th, which is substantially reproduced in Sir Henry Burdett's letter above.—ED. L.

THE DRUG STROPHANTHUS AND THE NEW PHARMACOPŒIA.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Oct. 10th, p. 901, attention was called to the alterations in strength of various important preparations, including tincture of strophanthus, in the new Pharmacopœia. The change in this preparation is, however, so drastic, and may have such far-reaching effect, that I feel it requires more extended comment. Strophanthus has been well-known as a powerful remedy in heart affections ever since its introduction into European medicine by Professor Sir T. R. Fraser, and because of its potency it has long been desired that some method of assay and standardisation should be evolved.

Hitherto, however, chemists have been unable to formulate any satisfactory process of evaluation, based on chemical constituents, and recourse has been perforce made to pharmacological tests in physiological laboratories. These were first prominently formulated in a paper read before the British Pharmaceutical Conference at Brighton by Dr. W. E. Dixon in 1905, and the standard set up by him was that "a quarter of a minim of the tincture of strophanthus of the 1898 Pharmacopœia, which has a strength of 1 part of the drug in 40, should be sufficient to arrest the heart in systole of a frog weighing 20 grammes in about one hour." Dr. Dixon expressed the opinion that to meet this standard the tincture of the 1898 Pharmacopœia would have to be diluted, although it was only (approximately) half the strength prescribed in the 1890 Additions to the 1885 Pharmacopœia. Records of experiments spread over some years past, which I have before me, confirm this view, as a clear majority of a number of samples made in accordance with the Pharmacopœia have shown nearly double the potency specified by Dr. Dixon as the desirable standard when tested pharmacologically on frogs. It was, therefore, highly desirable that, when an opportunity of revision occurred, the strength of the tincture should be reduced; but, on the contrary, the Pharmacopœia Committee of the General Medical Council, following the provisions of the international agreement which was signed at Brussels on Nov. 29th, 1906, and which appears to have been based on a slavish adherence to the decimal system rather than on any therapeutic considerations or clinical experience, has increased the strength of the tincture four-fold, making it now 1 in 10 instead of 1 in 40, which, as is shown above, already erred on the side of excessive potency. It is true that at the same time the official dose has been reduced from 5 to 15 minims to 2 to 5 minims, but, as was pointed out last week, the pharmacopœial doses are not in any way binding.

As regards the legal position, it is now well established that the Pharmacopœia is a presumptive standard of strength for all preparations named therein. On and after Dec. 31st next it will be incumbent on all pharmacists to dispense, when tincture of strophanthus is prescribed, the preparation of the new Pharmacopœia, which will doubtless be in many cases four times as powerful and toxic as the writer of the prescription intended.

A very anomalous position will thus be created, involving, not only the throwing of an unfair burden of responsibility upon pharmacists, but also endangering the health and it may be the lives of patients. Although the Pharmacopœia has, I understand, been passed for the press the editors have expressed a desire to be informed of any typographical or other errors which may be discovered by those who have been favoured with a view of advance copies, and it is with the hope that it may not be too late to correct what would seem to be a grave error of judgment that I write this note.

I am, Sir, yours faithfully,
H. WIPPELL GADD, F.C.S.,
Barrister-at-Law; Author of "A Synopsis of the British Pharmacopœia," &c.
Exeter, Oct. 10th, 1914.

CHANGES INDUCED IN BLOOD BY FEEDING.

To the Editor of THE LANCET.

SIR,—My attention having been drawn to the article on sanatogen in the *Journal of the American Medical Association* of Sept. 26th, 1914, p. 1127, I wish to point out that in the paper by Dr. Gage and myself in THE LANCET of Oct. 19th, 1912, the essential point was that the nuclei of nucleated blood corpuscles behave in the same way as do the nuclei of insectivorous plants and also the nuclei of the most diverse other tissue constituents when they are fed on proteins. It is very gratifying that so eminent a physiologist as Professor Carlson should have completely confirmed these changes in the nuclei, although he is unwilling to adopt as yet our explanation. It is regrettable, however, that Professor Carlson should have overlooked the following sentence in our original paper: "Since previous experiments have shown that nuclear changes are produced under normal conditions only by the protein foods and not carbohydrates and fats, we decided on choosing a very concentrated purin-free protein such as caseinogen." If Professor Carlson had not overlooked this sentence it would not have come as a surprise to him that feeding with "sanatogen, milk, crackers, casein, and casein and sodium glycerophosphate" produces the same result. Here again is a complete confirmation of our work, as all these preparations, including the crackers, contain protein. In conclusion, we want to reiterate the statement that we still hold milk proteins free from fat and sugar to be the ideal food for mammals whenever quick recuperation is called for.

The attack on your valuable paper is so scurrilous as to need no comment.

I am, Sir, yours faithfully,
GUSTAV MANN,
Professor of Physiology.
Tulane University of Louisiana, New Orleans, La.,
Sept. 28th, 1914.

PEDICULOSIS OF THE SCALP AND EYE DISEASE.

To the Editor of THE LANCET.

SIR,—May I call attention through your columns to an important, but I believe not sufficiently recognised, point in combating a form of eye disease which is exceedingly prevalent amongst children of the Board School class? I refer to the so-called phlyctenular keratitis, a disease which is responsible not only for much immediate suffering, but also for the most deplorable sequelæ in the form of visual disabilities resulting from corneal scars.

Methodical examination has convinced me that in the majority of the more severe examples of this condition the factor primarily responsible is a pediculosis of the scalp, the ocular affection owing its origin to a transference, in all probability by the fingers, of infective material from the scalp to the eyes. Nobody who has investigated the point in a series of cases can fail to recognise the intimate relationship between these two affections, or to be impressed time after time on the one hand by the beneficial effect upon the eye condition of treatment directed to the scalp, and on the other hand by the inadequacy of such ocular treatment as does not take cognizance of this relationship.

These considerations, apart from any others, appear to me to afford an urgent indication for the frequent periodical examination of the heads of all school children, followed when necessary by appropriate treatment, and facilitated by a regulation that, in the case of boys at any rate, the hair must be kept cropped close to the scalp. I am convinced that such a procedure would obviate much suffering and severe injury to sight, and would thus be justified not only on humanitarian but also on economical grounds.

I am, Sir, yours faithfully,
Oct. 6th, 1914. A. C. HUDSON.

ALPINE TREATMENT FOR THE COMING WINTER.

To the Editor of THE LANCET.

SIR,—I should be glad of the hospitality of your columns to correct a widespread impression amongst the medical profession in Great Britain that the Alps are not available during the coming winter as a health resort for British subjects. As far as this town is concerned the conditions have scarcely been changed at all by the war. The various hotels and pensions are with slight exception open and charging their usual prices. The local authority is prepared to guarantee that there will be no shortage of food supplies or of fuel, and the deficiency of horses due to the mobilisation has been rendered of no importance by the opening of the electric railway from Coire. Arosa has long been the Alpine resort in Switzerland with the largest proportion of English visitors, thus ensuring the safeguarding of their interests at a time when national feeling runs strong. There is perhaps a special reason that British visitors whose health makes it desirable for them to spend the winter here should make a point of doing so this winter in order that the pleasant traditions of the British colony may not be lost for future years.

The journey should not constitute a difficulty, even assuming that the usual route remains unavailable. Messrs. Thomas Cook and Sons in London have the matter in hand and are prepared to advise as to what route is available at a particular time. There is now a regular service of boats to Bordeaux, whence the journey to Geneva lies quite outside the zone of warfare; or France may be avoided altogether by the sea route to Genoa and thence by Milan and the St. Gothard.

I am, Sir, yours faithfully,
Arosa, Switzerland, Oct. 1st, 1914. EGBERT MORLAND.

IONISATION FOR BILHARZIASIS.

To the Editor of THE LANCET.

SIR,—As the condition of vesical and rectal bilharziasis is so intractable and virtually unaffected by any generally practised treatment, anything promising relief from this troublesome condition is to be welcomed. Owing to the embedded situation of the parasite and consequent difficulty of penetration of efficacious therapeutic agents that will not by reason of their potency at the same time prove harmful to the mucous membranes, it is not surprising that here, as in the somewhat analogous case of ringworm, the results of ordinary treatment are so hopelessly disappointing. By the modern device of causing chemical penetration through the agency of the constant current I would suggest that a valuable and satisfactory means may hereby present itself for dealing with bilharzial infections by means of ionisation, and I think this procedure might be given a fair and extended trial in this condition. The ionising fluid having been introduced into the bladder or rectum and a suitably insulated electrode inserted, the ordinary technique is employed. The results of ionisation for ringworm are also likely to improve so much with the advance of technique as to cause this method ultimately to supplant all others.

I am, Sir, yours faithfully,

G. S. THOMPSON, F.R.C.S. Eng.

Kimberley, South Africa, Sept. 12th, 1914.

OSTEO-ARTHRITIS OF THE HIP-JOINT.

To the Editor of THE LANCET.

SIR,—I am very unwilling to trouble you further on the personal matter of the views I have expressed as to the connexion between the term "sciatica" as ordinarily understood and osteo-arthritis of the hip-joint. In my "study" of the disease a reference to the appendix will show that in my experience the vast majority of the cases there detailed proved the presence of "trouble" in the hip-joint. Given such trouble of a gouty nature I further ventured to suggest that in certain neglected individuals the result was an osteo-arthritis. Dr. Jones and Dr. Llewellyn have found in another set of cases trouble in the joint associated with pain along the anterior crural and obturator nerves. I have again to say their observations constitute a strong and additional reason for the careful examination of the articulation.

I am, Sir, yours faithfully,

Dingwall, Oct. 6th, 1914. WILLIAM BRUCE.

To the Editor of THE LANCET.

SIR,—The recent paper on osteo-arthritis of the hip by Dr. R. Ll. J. Llewellyn and Dr. A. Bassett Jones and the resulting correspondence deal with some extremely important and debatable problems. Few will agree with Dr. W. Bruce's view that sciatica is practically always due to osteo-arthritic changes in the hip-joint. Personally in examining a patient with definite sciatic pain the hip-joint is not uppermost in my mind, although as a routine this joint is examined. There are many far more common causes of sciatica than the above-mentioned lesion. Primary sciatica I believe to be extremely rare. Dr. Llewellyn and Dr. Bassett Jones, on the contrary, hold that gouty sciatica is a common primary form. In most cases sciatic pain occurring in individuals with definite gouty lesions, or with vague manifestions of the gouty diathesis, can be explained on static grounds. True sciatic neuritis dependent on microbic infection such as the streptococcus rheumaticus is occasionally seen and can be correctly designated as primary sciatica. The bulk of the cases, however, are secondary in origin, lesions of the spine, spinal cord and meninges, pelvic viscera, and static defects accounting for the majority.

Lesions of the sacro-iliac joint are well recognised as competent causes of sciatic pain, but there is still a great deal of confusion as to the exact type of lesion present. In this controversial subject I have taken a great deal of interest, as during last winter I had a unique opportunity of investigating a series of such cases in the Orthopædic Clinic of the Massachusetts General Hospital, Boston, a clinic which is the home of sacro-iliac affections. Since the original paper of Goldthwait and Osgood in 1905, cases presenting certain features have been indiscriminately called sacro-iliac relaxation, strain, or displacement. Dr. Llewellyn and Dr. Bassett Jones evidently recognise the existence of relaxation of the sacro-iliac joints. In a communication in the *Boston Medical and Surgical Journal* of June 25th, 1914, and in another paper shortly to be published in the *Medical Chronicle* I have discussed the evidence for and against sacro-iliac relaxation as an entity.

Professor Lovett, of Boston, has recently considered this question, and has expressed views contrary to those generally accepted. Briefly the position at present is as follows. Of cases manifesting the sacro-iliac syndrome, of which lumbago and sciatica are prominent features, a certain proportion are due to traumatic strain of the sacro-iliac joint, a condition seen most frequently in the male sex. The remaining cases in which injury has played no part are to be classed as static postural defects, or what Lovett calls defective balance. In all of these an obvious bad body poise is present with a shifting forward of the centre of gravity of the body. Excessive strain is thrown on to the posterior musculature of the spine and lower limbs, a strain which manifests itself in pain and tenderness at ligamentous insertions; that is lumbago and sciatica. The direct treatment of the postural defect relieves the sciatica. There can be no doubt that sacro-iliac relaxations are practically non-existent; in the male sex such a condition is an anatomical impossibility. I feel sure that gouty sciatica is static in origin in the majority of instances. Osteo-arthritis of the lumbar spine is a not infrequent cause of sciatic pain, unilateral or bilateral; this lesion accounts for a considerable proportion of cases of so-called sciatic scoliosis. Amongst the many other causes of secondary sciatica spinal cord tumours and chronic spinal meningitis are noteworthy, as they are usually diagnosed late. The possibility of these two lesions should always be borne in mind.

In conclusion, there is one other point in Dr. Llewellyn and Dr. Bassett Jones's paper which invites discussion. The authors state that in the later stages of osteo-arthritis of the hip-joint treatment is of little avail. This is hardly in keeping with modern surgical advances. There are two procedures which give excellent results in selected cases—(1) the operation cheilotomy, and (2) arthrodesis. The former operation is satisfactory in cases where the osteophytes are responsible for most of the pain and crippling. Arthrodesis is particularly indicated in a younger individual in whom a painless stable joint will enable the patient to continue his occupation. The technique devised by Albee, of New York, is generally followed, the limb being fixed in full abduction until bony union is attained.

I am, Sir, yours faithfully,

HARRY PLATT, M.S. Lond., F.R.C.S. Eng.

Manchester, Sept. 28th, 1914.

THUCYDIDES ON THE PLAGUE AT ATHENS.

To the Editor of The Lancet.

Sir,—In your review of Dr. Raymond Crawfurd's book "Plague and Pestilence in Literature and Art" in The Lancet of July 4th I note with interest that he holds the view that the disease described by Thucydides[1] as "plague" was really typhus fever. I think that a few extracts from the Greek historian's lurid description should be sufficient to prove the soundness of Dr. Crawfurd's conclusion.

It matters little whether so obscure an individual as myself agrees with or differs from so eminent a classical scholar as Dr. Crawfurd, but it may interest him to know that even in isolated spots in South Africa may be found some who appreciate his services to the historical side of medicine. I came to the conclusion many years ago that the disease described by Thucydides was really typhus fever; but I refrained from raising the question in your columns—though I often thought of doing so—for the simple reason that, remote as I am, and have been for many years, from good libraries, it might have seemed presumptuous on my part to offer an opinion one way or other on a subject which I assumed had been decided by scholars long ago. It should seem, however, from your review that this is not the case; and it is certainly matter for astonishment to me that any medical reader of Thucydides should be in doubt as to the nature of the disease he describes under the name of "plague." As a record of disease emanating from remote antiquity, and written by one who suffered from it himself—"the greatest historian that ever lived," as Macaulay styles him—it must always possess an abiding interest, at least for those to whom the large memories of the Hellenic past make any appeal. Nor will the interpretations of modern science—beyond changing the name of the disease—do particular violence to the historian's reputation for accuracy as to statements of fact. In setting forth my reasons for supporting Dr. Crawfurd's view I may also state the circumstances under which this subject first aroused my special interest.

Some 13 years ago, whilst attached to the South African Field Force, I often found myself compelled to extract what comfort I could from a very limited library. Amongst my books was a copy of Thucydides. The monotony of veld life forced me into communion with this ancient friend, as "something craggy to break my mind against"—to use Byron's metaphor.

I need not pretend that I found the text which alienated Porson, perplexed Arnold, and evoked Macaulay's admiring despair, a source of unmingled happiness. Too often I had to leave the great Athenian alone with his peculiar glory of self-repression and obscurity of phrase. Enough, however, remained to come within the scope of my powers, and of that the description of the plague at Athens claimed my particular attention. In an article written by me then and published in your columns[2] I made a passing reference to the subject, but there I left it, as it was foreign to the matter under discussion.

Now, taking a few of the symptoms of typhus fever as described in a modern text-book of medicine—such as, for instance, pyrexia, headache, injected conjunctivæ, vomiting, bronchial catarrh, thirst, mottled rash, and sleeplessness—let us see what is to be found in Thucydides about each and all of them. It will, in fact, be seen that each of these symptoms is discussed by him almost in the order in which I have given them: 1. "Violent heats in the head." (*"τῆς κεφαλῆς θέρμαι ἰσχυραὶ."*) 2. "Redness and inflammation of the eyes." (*"τῶν οφθαλμῶν ἐρυθηματα καὶ φλόγωσις."*) 3. "Sneezing and hoarseness came on, and in a short time the pain descended into the chest with a violent cough." (*"πταρμος καὶ βράγχος ἐπιγίγνετο ἐς τά στήθη ὁ πόνος μετα βηχὸς ἰσχυροῦ."*) 4. Vomiting (*"καὶ ὁπὸτε ἐς τὴν καρδίαν στηρίξειεν ἀνέστρεφέ τε αυτὴν"*)—i.e., "when it settled in the stomach, it upset it." 5. A rash of a "reddish" (*ὑπὲρυθρον*) "livid" tint (*πελιτνον*). 6. Thirst. This was so great that not even the lightest clothing could be borne. The stricken ones lay stark naked, and many threw themselves into the cisterns, "being in the grasp of an unquenchable thirst" (*"τῃ διψῃ ἀπαυστῳ ξυνεχομενοι"*). 7. Sleeplessness (*"καὶ ἡ ἀπορία μὴ ἡσυχαζειν καὶ ἡ ἀγρυπνία ἐπέικετο δια παντός"*)—i-e., "and the misery of restlessness and wakefulness weighed upon all." This is a fairly good description of the "coma-vigil" of modern clinicians. The other symptoms described correspond to our sequelæ. They are: gangrene of the genitalia, fingers, and toes, loss of eyes, and sometimes complete loss of memory (probably dementia):—*"κατεσκηπτε γὰρ ἐς ἀιδοια καὶ ἐς ἀκρας χειρας καὶ πόδας,"* &c. …… *"τους δὲ καὶ λήθη ἐλαμβανε,"* &c.

So far, then, and no farther does it seem to me necessary to quote from Thucydides to establish the view that he is in reality describing typhus fever.

I am, Sir, yours faithfully,

Duncan Mackenzie Macrae, M.A., M.B.,
Ch.B. Glasg.

Roberts Victor Diamond Mine, Victor, O.F.S., Sept. 1st, 1914.

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[1] Hist., Bk. 2, chaps. 47–53.

[2] The Lancet, June 27th, 1908, p. 1838.

Central Midwives Board.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Oct. 8th, with Sir Francis H. Champneys in the chair. A letter was considered from Miss Llewellyn Davies, general secretary of the Women's Coöperative Guild, asking the Board to appoint a representative to join a deputation to the President of the Local Government Board, in his capacity as such and as chairman of the Government Committee for the Relief of Distress, to consider the care of maternity in time of war. The Board directed that Miss Llewellyn Davies be informed that the Central Midwives Board, while sympathising with any scheme which had for its object the care of maternity in time of war, did not see its way to join the deputation. A letter was considered from the secretary of the County Councils Association transmitting a copy of a resolution passed by the executive council at its meeting on July 29th with regard to the registration and inspection of lying-in homes, institutions, and houses where women are habitually taken in for their confinement for pay. The secretary to the Board reported that the executive council of the County Councils Association had resolved that in the opinion of the council it is desirable that all lying-in homes should be registered and inspected by the inspectors of the local supervising authorities under the Midwives Act. Further correspondence was considered with regard to a complaint made by a certified midwife of the conditions of midwifery practice in Bangor and the absence of inspection by the local supervising authority. The Board decided that the correspondence be referred to the County Councils Association. A letter was considered from a certified midwife approved by the Board for the purpose of undertaking the practical training of pupils at her nursing home, asking that her approval may be extended to cover a second training home not in the immediate vicinity of the first. The Board decided that the application be refused.

THE WAR.

ARMY MEDICAL SERVICE: A SPECIAL SANITARY COMMITTEE.

THE Director-General of the Army Medical Service reports a highly satisfactory state of health of the armies camped, billeted, or quartered in the various commands at home. Nowhere is there any undue prevalence of preventable disease, and the massing of large numbers of men in the military and other stations under difficult conditions has not been accompanied by any untoward results.

Concerning the health of the Expeditionary Force, the Director-General reports an equally satisfactory state of affairs. He is satisfied that the utmost vigilance is being exerted to maintain the present position. To ensure still greater security Lord Kitchener has decided to establish at the War Office a sanitary committee, consisting of military and civilian members, to advise him on all matters affecting the health and well-being of troops at home and abroad. He is also sending the Director-General, Sir Arthur Sloggett, overseas to make a thorough inspection of the medical arrangements and coördinate the work of the Army Medical Services with the St. John Ambulance and Red Cross Societies, of which he will be Chief Commissioner. Sir Arthur Sloggett will be accompanied by Colonel Burtchaell, Royal Army Medical Corps, as staff officer. During his absence at the seat of war Sir Alfred Keogh will act as Director-General at the War Office.

NEW CONSULTING PHYSICIANS WITH THE EXPEDITIONARY FORCE.

Sir Almroth Wright, Sir Wilmot Herringham, and Sir John Rose Bradford have been appointed consulting physicians with the Expeditionary Force.

FREE MEDICAL ATTENDANCE FOR THE DEPENDENTS OF MEN ON ACTIVE SERVICE.

In our issue of Sept. 19th we published a letter from Mr. J. A. Pease, President of the Board of Education, announcing that a scheme had been devised for providing medical attendance, with medicine and appliances, to necessitous dependents of soldiers and sailors serving with the colours. The Central Committee for the Prevention and Relief of Distress set up a special subcommittee to bring this scheme into operation on a properly organised and comprehensive basis. A circular issued this week by the subcommittee, which is now known officially as the Naval and Military Dependents (Medical Treatment) Committee, announces that the necessary arrangements having been made, the British Medical Association and the Pharmaceutical Society have communicated with individual members of the medical and pharmaceutical professions, informing them of the detailed arrangements adopted and inviting their coöperation. To this appeal a generous response has been received from medical men and chemists in all parts of the country, who have intimated their willingness to give their services in accordance with the scheme, and the cordial coöperation of Local Representative Committees is invited. These committees are asked to arrange for the distribution of medical vouchers to dependents in need of medical treatment in accordance with the offers of service made by medical practitioners and pharmacists. This voucher, which is called the Medical Book, and of which we have received a specimen copy, will enable the recipient to obtain free medical treatment, and contains prescription forms which will secure free drugs and appliances, the latter according to a fixed schedule, from the chemist. These vouchers will, of course, not be issued to persons entitled to medical benefit under the National Insurance Act, and it will be open to medical men or chemists to make representation to the Local Representative Committees, where it would appear that the circumstances of persons applying for assistance do not entitle them to be admitted to the benefits of the scheme. Applications for copies of the above circular, for supplies of the medical book, or for information on other matters should be made to the joint secretaries, Naval and Military Dependents (Medical Treatment) Committee, Wellington House, Buckingham Gate, London, S.W. Briefly summarised, the duties of the Local Representative Committees in connexion with this scheme are (*a*) to arrange for the issue of medical books to suitable recipients, and (*b*) to keep a list of persons to whom books have been issued.

THE CONDITION OF OUR WOUNDED.

A surgeon on service at one of the London base hospitals (Territorials) has given us some impression of the wounded who have come under his care which will relieve certain widely spread apprehensions. Of those who came from the front after the battle of Mons and during the retreat the majority suffered from general exhaustion, want of rest, and foot-soreness rather than from wounds, and rest and care worked immediate restoration in the majority of cases. Of those who came after the battles of the Marne and the Aisne, nearly all were suffering from shell and bullet wounds, the number of the former greatly preponderating, this observation thus exactly bearing out Mr. Makins's statement of the position in the French hospitals. The striking point, said our informant, was the extraordinarily good condition in which the men arrived and the careful and cleanly nature of the dressings. Considerably less than 10 per cent. of any suppurating wounds came under his notice, which is gratifying information taken in connexion with the comparatively large proportion of shrapnel injuries. Rapid healing has taken place in many cases and the men soon regained their general health. On inquiry from them it became evident that every possible opportunity had been taken during their transport to change the dressings, and the commissariat arrangements appear to have been admirable, the men expressing themselves as having been well fed all through their long journey of several days. In fact, the cheerfulness of those who have been returned from the battle of the Marne, despite their wounds, was in marked contrast to the depressing condition of those who had taken part in the retreat from Mons. This first-hand evidence of good organisation and thorough attention will be received with much pleasure.

THE FRENCH MEDICAL PROFESSION AND THE WAR.

To those who are accustomed to receive regularly the medical journals of the continental nations now at war their abrupt cessation with the outbreak of hostilities brings with it a curious sense of isolation. Whether the German medical weeklies are being printed we actually do not know, but correspondents in Switzerland indicate that some at least are still appearing. A letter from Paris, published in the *Journal of the American Medical Association* for Sept. 19th, states that the *Semaine Médicale* has ceased publication and that the *Presse Médicale* is appearing as a sheet of medico-military information. The writer of this letter gives some interesting particulars of the way in which the profession in France, as in Britain and Germany, has volunteered its services to the army and the navy. As in these other countries, too, certain districts have been seriously depleted of medical practitioners, but steps have been taken to see that the really sick are not without such professional service as they may need. The French Red Cross Societies are three in number: the Société de Secours aux Blessés, the Association des Dames Françaises, and the Union des Femmes de France. These societies between them are able to provide their country with 600 hospitals containing 35,000 beds and a staff ready to act, while the Union des Femmes de France can send 10,000 trained nurses to the army. The Académie de Médecine has undertaken the manufacture of small-pox vaccine, and a general campaign of vaccination and revaccination has been organised. It is also advising general antityphoid vaccination, not only for the army, where it is compulsory, but also for the civil population. The Académie des Sciences has appointed committees to deal with various subjects, including hygiene and medicine. The sale of absinthe has been forbidden throughout France. The war is at the present time demanding a much larger proportion of the available energies in France and in Germany than it is in this country, and it behoves Britain to see to it that when her own resources are more heavily taxed, as they certainly will be later on, everything and everybody is ready for service.

MEDICAL CASUALTIES AT THE FRONT.

The following additional announcements have been made with regard to officers of the Royal Army Medical Corps at the seat of war:—

Missing: Lieutenant R. A. Flood.

Captain G. A. Kempthorne, previously reported missing, is now unofficially reported wounded and a prisoner of war; Colonel H. N. Thompson, Major H. W. Long, Captain J. H. Graham, Captain G. H. Stevenson, Captain E. S. B. Hamilton, Captain H. B. Kelly, and Captain R. J. Cahill, previously reported missing, are now unofficially reported prisoners of war.

The first list received from Germany of British officers who are prisoners of war contained the following medical names: Major P. H. Collingwood, Major W. B. Fry, Major J. C. Furness, Captain W. K. Beaman, Captain J. P. Lynch, Captain E. M. Middleton, Captain A. A. Sutcliff, Lieutenant A. T. Brown, Lieutenant P. P. Butler, Lieutenant S. M. Hattersley, Lieutenant H. W. Hills, Lieutenant J. L. Lauder, Lieutenant A. Preston, and Lieutenant L. M. Routh.

In the list of wounded British officers in Paris hospitals furnished to the press by Lord Robert Cecil appeared the names of Major E. McDonnell, R.A.M.C. (at Versailles), and Lieutenant A. Watson, R.A.M.C. (at Claridge's).

OBITUARY OF THE WAR.

CHARLES DALTON, L.R.C.P. & S.IREL.,

LIEUTENANT-COLONEL, ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Charles Dalton, who died of wounds received in action, was born on May 3rd, 1867. He was educated at Carmichael College, Dublin, and obtained the diplomas of the Irish Royal Colleges in 1888. He joined the Army Medical Service as surgeon in January, 1891, became Major in the Royal Army Medical Corps in January, 1903, and was promoted Lieutenant-Colonel in May of last year. Before the outbreak of war he was stationed at Dublin, holding the post of deputy assistant director of medical services. Colonel Dalton had a long and distinguished list of war services. He served in Burma in 1893, being present at operations in the Kachin Hills, for which he received a medal with clasp. In 1897–8 he served in the North-West Frontier of India, taking part in the Malakand expedition and the action at Landakai, receiving a medal with clasp. In 1898–9 he took part in the Karene expedition in Sierra Leone, and was mentioned in despatches and received a medal with clasp. In the following year he served in the South African war as a special service officer, taking part in operations in Natal and being present at the relief of Ladysmith, where he was severely wounded. He was also engaged in operations in the Orange Free State during 1900, including actions at Houtnek, Vet River, and Zand River; and in Cape Colony, south of Orange River. He was mentioned in despatches, and received the Queen's medal with three clasps.

FRANK FORREST, M.R.C.S. ENG., L.R.C.P. LOND.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain Frank Forrest, who was killed in action on or about Sept. 13th at the battle of the Aisne, entered Owens College, Manchester, as a medical student in the session 1895–96, living at that time with his mother at Blackburn. After pursuing the usual course of studies for the English Conjoint diplomas he qualified M.R.C.S. Eng. and L.R.C.P. Lond. in 1904. After qualification he held the post of assistant house surgeon in the North Staffordshire Royal Infirmary, Stoke-on-Trent. He joined the Royal Army Medical Corps as lieutenant in January, 1906, and was promoted captain in July, 1909. Before the outbreak of war Captain Forrest was stationed at the Royal Army Medical College, and was then attached to the Irish Command.

HUGH JAMES HOPPS, M.B., CH.B. EDIN.,

SURGEON, ROYAL NAVY.

Surgeon Hugh James Hopps, who was drowned when H.M.S. *Aboukir* sank on Sept. 22nd, was born at Chipping Norton, Oxfordshire, in 1887. He studied medicine at Edinburgh, and graduated M.B., Ch.B. at the University in 1911, after a creditable career as a student. He was a popular member of the Edinburgh Students' Union, and held a prominent position among the men of his year. He entered the navy as surgeon in October, 1913, and joined the ill-fated *Aboukir* at the beginning of August.

ALFRED EDWARD TURNBULL, M.B., CH.B. EDIN.,

SURGEON, ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Alfred Edward Turnbull, who went down with H.M.S. *Cressy* on Sept. 22nd, was born at Pinkerton, Dunbar, on March 10th, 1882, the son of Mr. Phipps Turnbull, of Edinburgh.

He studied medicine at Edinburgh University, the Royal College of Surgeons of Edinburgh, and Glasgow University. He graduated M.B., Ch.B. at Edinburgh in 1907, and was clinical assistant in the University surgical wards of the Royal Infirmary, Edinburgh, in 1908, resident house surgeon in 1908–09, and resident gynæcologist in 1909–10 at the Royal Infirmary. Previously he had been Mackenzie bursar in anatomy and prosector in the University of Edinburgh. Dr. Turnbull was in practice at Faringdon, Berkshire, and having been a surgeon in the Royal Naval Volunteer Reserve since January, 1912, he was called up when the Navy was mobilised and joined his ship on August 1st. A popular and able young physician, of whom much was expected in his future career, he was a Fellow of the Edinburgh Obstetrical Society, and had published several communications upon subjects connected with midwifery.

ARTHUR KEITH ARMSTRONG, M.R.C.S. ENG., L.R.C.P. LOND.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant Arthur Keith Armstrong, who died in France on Sept. 15th from wounds received in action, was born in 1881 in London, and was the only son of Mr. Henry Armstrong, of Dartmouth Park-road, London, N.W. He was educated at Highgate School and St. Bartholomew's Hospital, and qualified at the English Conjoint Board in 1907. Soon afterwards he became house surgeon at the Huntingdon County Hospital, and later surgeon on board the British India mail steamship *Jelunga*. In 1909 he entered into partnership at Monmouth with Dr. Lloyd G. Smith and was appointed honorary medical officer to the Monmouth Hospital in the same year. He married Louise, daughter of John Macmin, and leaves two children. When war was declared he offered his services to the War Office, and was gazetted temporary lieutenant in the Royal Army Medical Corps on August 18th. After a short period at Woolwich he was sent abroad to join the Expeditionary Force, and was one of the first medical men to lose his life for his country.

HERBERT LESLIE HOPKINS, M.D., B.S. LOND.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant Herbert Leslie Hopkins, assistant county medical officer of health of West Suffolk, was reported as being killed on Sept. 19th whilst serving with the Expeditionary Force. He had received permission from the county council on August 10th to volunteer for active service, and joined the forces at Devonport on August 15th as bacteriologist and pathologist to the military hospital there. On August 26th he sailed for France. He was born on August 23rd, 1887, and joined Guy's Hospital in 1905, having obtained an entrance scholarship in arts. During his student career he was a student demonstrator in physics, anatomy, microscopic pathology, and bacteriology, and pathological assistant to the surgical registrar. He took the degree of M.B., B.S. of the University of London in November, 1911, at the same time passing the examination for the M.R.C.S. Eng. and L.R.C.P. Lond. After qualification he devoted some time to study in various special departments at his medical school. Subsequently to serving as house physician to the Derbyshire Royal Infirmary in 1912, he was appointed house physician to the City of London Hospital for Diseases of the Chest, which appointment he held until Sept. 1st, 1913, when he commenced his work in West Suffolk. In July of this year he passed the examination for the degree of M.D. in State Medicine in the University of London. Dr. A. H. Bygott, county medical officer of health of West Suffolk, writes: "By the death of Lieutenant Hopkins the medical profession, especially the sanitary branch of it, has lost one of its ablest junior officers. He was a man of high attainments, a sound physician, capable surgeon, and good bacteriologist. During the year he worked with me I formed the highest opinion of his capabilities, and had his life been spared I feel sure there is no position in his profession to which he might not have attained. His kindly disposition and pleasant manners made him a general favourite both in official and social life. Able, energetic, conscientious, and very thorough, his death is a calamity to his colleagues and to the council he so loyally served."

CASES FROM THE FRONT AT THE SECOND EASTERN GENERAL HOSPITAL.—The two fresh convoys of wounded from France admitted to the Second General Eastern Hospital, Brighton, contained many men very seriously injured. The wounds were mostly from shrapnel received at the battles of the Marne and the Aisne. Many of the patients were utterly exhausted on arrival, having been travelling by train and boat under most unfavourable circumstances for seven days. However, with rest and care it is wonderful how well they have pulled round. Of nearly 600 admissions from the war from Sept. 1st to the present there have only been three deaths. Among the casualties there were a large number of bullet wounds of bones and joints, many of them septic and very badly comminuted. Every possible effort is being made to save the limbs, even in the worst cases, and so far there have been no amputations performed. It is almost impossible to hope that none will have to take place, as some of the wounds are extremely bad, but in a great many there is no doubt that the limb will be saved. Appended are notes of a few of these cases.

Compound fracture of the head of the humerus: This was an injury of the upper part of the arm, breaking the head of the humerus. About ten days after the wound the patient had a sudden swelling over the pectoral muscles of considerable extent, and he at the same time became very blanched. It was clear that there was a large subcutaneous hæmorrhage. The swelling was incised and attempts were made to tie the bleeding vessel. This was found to be impossible, and therefore the subclavian artery was ligatured. This procedure stayed the main part of the bleeding, but it was necessary to plug the wound to arrest a good deal of rather free oozing. He did very nicely for a month, when he had after some slight exertion free bleeding from the wound, which was stopped by plugging with gauze. This happened a second time about a week later. He is now in a bad state from loss of blood, and will certainly not be able to stand many more such attacks. *Injury to knee-joint:* In one case the whole knee is disorganised, the upper end of the tibia and the lower end of the femur are smashed, and the joint is full of blood. Although an attempt is being made to save the limb success is very doubtful. A second example of wound of the knee is the following. The bullet was lodged between the patella and the lower end of the femur without any fracture. It was removed, but there is extensive synovitis, happily at present not purulent. There are a few very interesting cases of *bullet wounds of the skull.* In the first case the man was struck by a bullet in the left vertical region, and left lying in a trench half filled with water for 40 hours, with practically no attention. When picked up he was found to have paralysis of the right leg. On admission he had a punctured wound of the vertex, with small pieces of depressed bone. There was no sign of any bullet, although there can be little doubt that it is lodged somewhere in the skull. The paralysis of the leg has quite cleared up. The lesion here was some slight injury to the leg centre in the left cortex. In a second case, the man was struck by a bullet in the vertex, and on his admission there was found a wound on this part into which had been driven deeply several pieces of bone. The brain into which the bone had been forced was suppurating. X ray examination showed no trace of the bullet. The wound was opened up, the skull trephined, the pieces of loose bone removed, and the abscess drained. The question here is, Did the bullet enter the skull and become hidden somewhere in the base, or did it strike tangentially, glance off, and simply drive in the fragments of bone without itself entering the cranium? At any rate, whatever happened the man is now making very good progress. A curious case is one of *concussion of the spine.* The patient had marched and fought for two days practically without food, when he was struck by a piece of shrapnel in the upper part of the left thigh, the bullet passing upwards and lodging under the skin of the right ribs low down. He lay on the ground in pouring rain for 48 hours, all the time exposed to shell fire, without food or water, or assistance of any kind. He found that he was paralysed in both legs, had no sensation in them, and could not empty his bladder. At the end of this time our men drove the Germans back and the ambulance was able to collect the wounded. A surgeon on the field at once passed a catheter, and the bullet was extracted during his journey on the boat to Southampton. He is now rapidly getting well. He has the full use of his legs, sensation is returning, but so far the bladder and rectal paralysis is still present. The rapid improvement of the cord symptoms is clear proof that there was no actual severance of the organ. Probably what has happened is this. The bullet, in passing by the spine, gave rise to a well-known phenomenon of bullet wounds, and caused a rapid vibration of the cord, and thus produced the symptoms of concussion. The prognosis is quite good; already, as mentioned, the symptoms are rapidly clearing up. *Bullet wound of the liver:* This man was shot through the upper part of the abdomen, the bullet passing through the liver. On admission he was passing blood per rectum, and there was a swelling in the abdomen, which was at once opened and found to be an abscess. The bleeding from the rectum stopped. The abscess drained well, and the man did nicely for a month, when he was suddenly seized with symptoms of acute intestinal obstruction—e.g., persistent vomiting, constipation, and pain. His abdomen was opened and it was found that there were many recent adhesions binding down the bowel and causing blocking. These were as far as possible released, but it was found impossible entirely to relieve the obstruction in this way, and therefore the dilated small intestine was joined to the large bowel. The man is now, 48 hours after the operation, somewhat better, but in a very precarious state. *Shrapnel wound of the pelvis:* This man was struck by a shrapnel bullet in the lower part of the abdomen, which passed through his pelvis, just missing the bladder, and finally lodged high up in the thigh. Some considerable difficulty was encountered in removing it, but it was finally found embedded in the femur and taken out. *Shrapnel bullet embedded in the head of the tibia:* The patient was struck in front of the leg, the bullet passing directly backwards and lodging in the head of the tibia just over the popliteal artery. It was causing a good deal of pain, and there was a discharging sinus, so it was decided to take it out. The sinus in the bone was enlarged by chiseling, and the bullet found embedded in the bone, in which there was an abscess cavity, which is now doing well. *Extensive shrapnel wound of the buttock:* This man had half his buttock blown off by shrapnel. There was a large sloughy wound of the buttock, which is healing rapidly with peroxide of hydrogen and iodoform dressings. It is referred to as an example of extensive wound of soft parts causing considerable disablement, for it will be very many weeks before the patient is fit to resume duty. These examples show how serious have been many of the cases sent to the hospital, and how fresh and varied has been the experience of the surgeons attached to the staff.

First Northern General Hospital (T.F.), Newcastle-on-Tyne.—The staff of this hospital is derived from that of the Royal Victoria Infirmary, Newcastle-on-Tyne, and the following is the personnel which has been mobilised:—Commanding Officer: Lieutenant-Colonel T. Gowans. Registrar: Major F. C. Pybus. Quartermaster: Lieutenant T. Gibbs. Lieutenant-Colonels: T. Beattie, W. E. Hume, A. M. Martin, and H. B. Angus. Majors: W. G. Richardson, J. W. Leech, G. G. Turner, R. A. Bolam, W. D. Arnison, and A. Parkin. Captains: G. Hall, T. M. Allison, D. W. Patterson, H. J. Slade, F. G. Armstrong, H. H. Markham, W. Seymour, and W. F. Wilson. Officers not yet mobilised: Major Wardale, Major Lyle, and Captain Whillis. The hospital has its quarters in the Armstrong College, Newcastle-on-Tyne, where class-rooms, &c., have been converted, after making the necessary sanitary additions, into wards. There have been arranged medical and surgical blocks, and also a block for venereal and parasitic diseases, this last entirely separate from the general wards. In addition to the beds thus arranged further accommodation has been secured by taking wards in the Royal Victoria Infirmary, which is adjacent to the college. In all some 650 beds are available, 450 in the college and 200 in the infirmary. The contiguity of the infirmary and college is most convenient, since the major surgical cases can be dealt with in the infirmary; moreover, the radiographic department in the infirmary is thus available. For minor surgical cases, varicose veins, hæmorrhoids, &c., a theatre has been arranged in the art department of the college. The kitchen arrangements are developed from those already existing in the College Refectory. The non-commissioned officers and men have their quarters in the Grand Assembly Rooms, also an adjacent building, while the nurses, about 100 in all, are quartered in the Royal Infirmary and also in the Grand Hotel. The whole block of buildings adapts itself admirably for the purpose of a temporary hospital. The hospital commenced its mobilisation on the evening of August 4th, and the first patient was admitted on the 7th, two days under the scheduled time for mobilisation. The hospital serves as a base and general hospital for the many troops now quartered between Berwick and the Hartlepools, though its proper area of supply includes an even greater portion of the Northern Command. A glance at the figures of patients admitted shows the amount of work which has been done already. During August (from the 7th) 545 cases were admitted, in September 898, and in October (up to the 7th) 216; in all, a total of 1659. In addition to the above figures, 242 men, wounded or sick from the Expeditionary Force, have been treated, a grand total of 1901 patients in two months. As patients convalesce they are returned to their units or sent for further treatment to other quarters which have been adapted to receive them—at Middlesbrough, Darlington, the Workhouse Infirmary (where wards have also been taken), Newcastle, Sunderland Eye Infirmary, and Blagdon Hall, Northumberland, the seat of Lord Ridley. The cases of sickness include pneumonia, septic throats, influenzal colds, and venereal and parasitic troubles, among others. No enteric fever has as yet appeared. The surgical operations done number 283, and include hernia (41), appendicitis (24), loose semilunar cartilage (13), hæmorrhoids (22), ruptured duodenal ulcer (3), varicose veins (18), and compound fractures (31). The staff, non-commissioned officers, men and nurses, have volunteered for service abroad practically unanimously.

War Appointments.—Colonel M. W. Russell, R.A.M.C., and Lieutenant-Colonel Sir H. Thornhill, K.C.I.E., have been appointed Inspectors of Administration, Medical and Sanitary Services, in connexion with the places of internment of prisoners of war.—Lieutenant-Colonel F. Wyville Thomson, I.M.S.(R.), has been appointed Senior Medical Officer, Tay Defences, Dundee.—Major Sir E. S. Worthington, medical officer to the Duke of Connaught, left Ottawa on Oct. 9th for the front.

The 2nd London Sanitary Company.—There are vacancies for two suitable officers in this unit. These two vacancies will be filled by duly qualified medical men, who should hold the D.P.H. or possess a public health degree. They should be willing to join for the period of the war or for four years, and they should be willing to serve abroad. If physically fit they should apply personally at the orderly room of the 2nd London Sanitary Company, R.A.M.C. (T.F.), to the commanding officer at the Duke of York's headquarters, Chelsea, S.W., at 10.15 any morning except Sunday. The work of the company is most interesting and valuable. It includes everything that appertains to the best sanitation of camps—e.g., the construction of incinerators, the control of water-supply and ablution places, the arrangement and control of kitchens, and the disposal of refuse. The experience that will be gained by young men working in this company will stand them in good stead all their lives, and it is not likely that the vacancies, now that they are announced, will remain for an hour without their applicants.

CITY OF LONDON HOSPITAL FOR OFFICERS.—The City branch of the British Red Cross Society, acting in conjunction with the Fishmongers' Company and with the generous help of City firms, has fitted up the first floor of the handsome hall of the company, overlooking the Thames at London Bridge, as a complete hospital for officers wounded in the war. The work of internal reconstruction and equipment has been admirably carried out, and the white-walled cubicles into which the hall has been subdivided have a most cheerful and comfortable appearance. The hospital is provided with operating theatre, anæsthetic room, X ray room, bath rooms, &c., and contains accommodation for some 25 patients. The administrative medical officer is Dr. W. J. Howarth; the consulting surgeon, Mr. D'Arcy Power; the consulting physician, Dr. Samuel West; and the resident surgeon, Mr. R. L. Mackenzie Wallis.

PAYMENT FOR FIRST-AID LECTURES IN IRELAND.—There has been considerable discussion among medical men in Ireland as to whether fees should be charged for the conduct of courses of instruction in first aid and ambulance work. Some men regard the delivery of such lectures as an offering to be given gratuitously for the good of the country. Others, not unnaturally, regard teaching of minor surgery and anatomy and physiology as a professional task deserving of pecuniary reward. In a great many cases it is pointed out the members of the first-aid classes are well able to contribute for the payment of their instructor. Moreover, the Department of Agriculture and Technical Instruction is devoting considerable sums of money for the upkeep of such classes as fulfil its requirements. The matter was considered at the last meeting of the council of the Irish Medical Association, and a resolution was carried to the effect that fees should be charged for the delivery of lectures on first aid and allied subjects. It has long been a rule of the British Medical Association that members should charge fees for such lectures.

THE INDIAN SOLDIERS' FUND.—An appeal has been issued by Lord Roberts on behalf of the Indian Soldiers' Fund, which has been established to provide the sick and wounded among our Indian troops at the seat of war with hospital accommodation in a warm climate and to furnish comforts such as additional warm clothing for Indian soldiers whilst in the field. For this purpose a subcommittee has been formed by the St. John Ambulance Association, with the approval of the Viceroy of India and the Secretary of State for India. It is proposed to set up a hospital of 500 beds at Alexandria, with a smaller subsidiary hospital at Marseilles. The honorary secretary's address is 1, Carlton House-terrace, London, W.

CANADIAN HOSPITAL FOR FRANCE.—The French official *Gazette* has published a decree authorising the Minister for War to accept a donation of £20,000 from the Canadian Government for the organisation and maintenance of a temporary hospital—to be called the Canadian Hospital—for sick and wounded troops.

THE Royal Westminster Ophthalmic Hospital has offered to the War Office ten beds for the use of the wounded suffering from injuries and diseases of the eye, and this offer has been accepted.

THE article on Open-air Hospitals in War Time, by Lieutenant-Colonel Robert Saundby, R.A.M.C. (T.F.), which appeared in THE LANCET of Sept. 19th, has been published in pamphlet form, price 6*d*., by Messrs. John Bale, Sons, and Danielsson, Limited.

ROYAL ACADEMY OF MEDICINE IN IRELAND.—The annual meeting of the Royal Academy of Medicine in Ireland was held on Oct. 9th. The report of the Council stated that there were 162 Fellows and 21 Members, being eight Fellows and one Member less than in the previous year. The accounts showed a satisfactory balance in hand.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the quarterly examination in Practical Pharmacy held on Oct. 8th the following candidates were approved:—

Douglas Harris Anthony, St. Mary's Hospital; Geoffrey Thomas Baker, Middlesex Hospital; John Behesnilian, Charing Cross Hospital; Arthur Stanley Carter, Middlesex Hospital; Charles Theodore James Drobig, St. Mary's Hospital; Colin Charles Gordon Gibson, Guy's Hospital; Lionel Augustine Joseph Graham, Cambridge University and Guy's Hospital; William Clavering Hartgill, Charles Guy Hitchcock, and Alwyne Harold Manfield, London Hospital; Arthur Daniel Morris, University College Hospital; Arthur Geoffrey Morris, Bristol University; Edward Hugh Morris, Charing Cross Hospital; Newman Frederick Norman, St. Bartholomew's Hospital; Arthur Llewellyn Spencer Payne, Guy's Hospital; Claude Hollingworth Philips, London Hospital; Roberto Quesada-Jiminez and William Leonard Eliot Reynolds, Guy's Hospital; Edward Ebenezer Samaraweera, Ceylon Medical College and King's College Hospital; James Ernest Scanlan, St. Mary's Hospital; Henry John Hugh Symons, King's College Hospital; Ramon Romero SyQuia, London Hospital: and Harold Vickers, St. Mary's Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Preliminary Science Examination for the Licence in Dental Surgery held on Sept. 29th and Oct. 1st and 2nd the following candidates were approved in the subjects indicated:—

Chemistry and Physics.—Alec Stuart Blacklaws, Guy's Hospital; Alfred Harold Bradbeer, Royal Albert Memorial College, Exeter; Eric Norman Commander, King Edward's School, Birmingham; Walter Samuel Hill, Bridlington Grammar School; Felix Reginald Knowler, Guy's Hospital; Stanley Herbert Lenton, Northampton School; Herbert Alfred Potter, Royal Dental Hospital; and David Errand Robinson and William Adam Woodward, Guy's Hospital.

Chemistry.—John Hulme Allwood, Liverpool University; Florence Goodman, Birkbeck College; John Herbert, Guy's Hospital; Bartle Leathlean, Bristol University; Ernest Findlay Shaw, Guy's Hospital; Robert Thorburn, Royal Dental Hospital; Joseph Frederick Weakley, Southend Technical School.

Physics.—Guy Harcourt Bowen, King Edward's High School, Birmingham; and Israel Jacobs, Bristol University.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Biology.—C. E. Clarke, Bombay.

Materia Medica and Pharmacy.—A. M. Berman, Belfast; C. H. Philips, London Hospital; and A. J. A. Wilson, Royal Free Hospital.

Anatomy.—A. M. Berman, Belfast; J. M. Forbes, Aberdeen; C. Gilroy-Jones, St. Mary's Hospital; E. M. Gooda, London Hospital; F. J. Harrington, Guy's Hospital; D. E. Hearn, Durham; R. F. Jarrett, London Hospital; H. D. L. Jones, St. Mary's Hospital; S. Mikhail, Cairo and Middlesex Hospital; J. B. Thomas, King's College; and L. J. Vincent, Cambridge and St. Mary's Hospital.

Physiology.—E. V. Beaumont, St. Mary's Hospital; A. M. Berman, Belfast; R. F. Jarrett, London Hospital; St. Mikhail, Cairo and Middlesex Hospital; T. F. Reason, St. Mary's Hospital; J. B. Thomas, King's College; and L. J. Vincent, Cambridge and St. Mary's Hospital.

THE late Surgeon-Major-General Robert Lewer, A.M.S., of Southsea, the valuation of whose estate is just announced, took part in Lord Roberts's march from Kabul to Kandahar.

MEDICAL MAGISTRATES.—Mr. F. S. Leech, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A., and Mr. John Todd, M.R.C.S. Eng., L.S.A., were on Oct. 8th sworn in as justices of the peace at the Gateshead police-court.

Sir Robert M. Simon, after 35 years' service upon the medical staff of the Birmingham General Hospital, recently retired from the post of physician, and on Wednesday last was presented with his portrait, which will be hung on the walls of the hospital, and an illuminated address. At the same time Lady Simon was presented with a diamond tiara.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—A meeting of this society will be held to-day, Friday, Oct. 16th, at 8.30 P.M., at 11, Chandos-street, Cavendish-square, London, W., when a paper on the Classification of the African Trypanosomes Pathogenic to Man and Domestic Animals will be read by Surgeon-General Sir David Bruce, A.M.S., C.B., F.R.S.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Gay, S. B., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Shardlow District of the county of Derby.

Graham, J. M., F.R.C.S. Edin., has been appointed Specialist in Operative Surgery at the Military Hospital, Edinburgh.

Hawkins, Arthur, M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Physician to the Nordrach-on-Dee Sanatorium, Banchory.

Lawrence, H. H., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Patterdale District of the county of Westmorland.

Macnicol, M., M.D. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Leven District of the county of Fife.

Rollings, J. W., L.M.S.S.A., has been appointed Medical Officer of Health to the Luton District Council.

Scott, W. M., M.B., Ch.B. Edin., has been appointed Medical Officer of Health of Sittingbourne during the absence of Dr. T. B. Heggs on Territorial Service.

Williams, J. R., M.B., C.M. Edin., has been appointed Non-resident Medical Officer of the Conway and Penmaenmawr Joint Isolation Hospital at Groesynyd.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

Birkenhead Borough Hospital.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birkenhead Union Infirmary.—Female Resident Assistant Medical Officer. Salary at rate of £120 per annum, with board, washing, and apartments.

Birmingham City Asylum, Rubery-hill.—Junior Assistant Medical Officer. Salary £200 per annum, with apartments, board, laundry, &c.

Birmingham, Yardley-road Sanatorium and Anti-Tuberculosis Centre.—Third Assistant Medical Officer. Salary £200 per annum, with board and residence.

Bolton Infirmary and Dispensary.—Second House Surgeon. Salary £120 per annum, with apartments, board, and attendance.

Bradford Royal Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

Bristol City Asylum, Fishponds.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

Bristol, Cossham Memorial Hospital, Kingswood.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.

Bristol Royal Infirmary.—House Surgeon and House Physician for six months. Salary at rate of not less than £100 per annum, with board, apartments, and laundry.

Bury and District Joint Hospital Board.—Assistant to Medical Superintendent. Salary £200 per annum, with board, washing, and lodging.

Bury St. Edmunds, West Suffolk General Hospital.—Resident Medical Officer, unmarried. Salary £160 per annum, with board, lodging, and laundry.

Canterbury, Kent County Asylum, Chartham.—Junior Assistant Third Medical Officer, unmarried. Salary £250 per annum, with quarters, board, washing, &c.

Cardiff City Mental Hospital, Whitchurch, near Cardiff.—Second Assistant Medical Officer, unmarried. Salary £280 per annum and all found.

Chelsea Hospital for Women, Fulham-road, S.W.—Dental Surgeon.

Chesterfield and North Derbyshire Hospital.—Senior House Surgeon. Salary £140 per annum, with board, apartments, and laundry.

Chichester, Royal West Sussex Hospital.—House Surgeon, unmarried. Salary £110 per annum, with board, residence, and washing.

City of Westminster Union Infirmary, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

Derby County Sanatorium.—Resident Assistant. Salary £250 per annum, with board, lodging, and laundry.

Dumfries, Crichton Royal.—Temporary Assistant Physician, unmarried. Salary at rate of 5 guineas a week, with apartments, board, laundry, and attendance.

Dundee Royal Infirmary.—Resident Medical Officer. Salary at rate of £40 per annum, with board, lodging, and laundry.

Durham County Hospital.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

Evelina Hospital for Sick Children, Southwark, S.E.—House Physician for six months. Also House Surgeon for four months. Salary at rate of £75 per annum, with board, residence, and washing.

Glasgow District Board of Control.—Resident Medical Superintendent for Mental Defectives, Stoneyetts, Chryston. Salary £300 per annum, with house, coal, light, &c.

Glasgow University.—Examiners.

Gloucester, Gloucestershire Royal Infirmary and Eye Institution.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

Great Yarmouth County Borough.—Assistant Medical Officer of Health. Salary £250 per annum.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £140 per annum, with board, lodging, and washing.

Greenwich, Dreadnought Hospital.—House Surgeon and Casualty Officer. Salary at rate of £50 per annum each, with board, residence, and washing.

Guildford, Royal Surrey County Hospital.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

Hospital for Consumption and Diseases of the Chest, Brompton.—House Physician for six months. Salary £5 5*s.* per month.

Huddersfield Royal Infirmary.—Senior and Junior Assistant House Surgeons. Salary £80 per annum each, with board, rooms, and washing.

Hull Royal Infirmary.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

King's Lynn, Lynn and West Norfolk Hospital.—House Surgeon. Salary £150 per annum.

Leeds General Infirmary.—Ophthalmic House Surgeon for six months. Salary £50 per annum, with board, residence, and laundry.

Leeds Hospital for Infectious Diseases and Tuberculosis.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £150 per annum, with board, lodging, and washing.

Leeds Public Dispensary.—Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

Leicester Corporation Sanatorium and Isolation Hospital.—Resident Medical Officer. Salary £250 per annum, with board and residence.

Leicester Royal Infirmary.—Resident Assistant House Surgeons and Dressers.

Lincoln County Hospital.—Junior House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, residence, and washing.

Liverpool, Brownlow Hill Institution.—Resident Assistant Medical Officer. Salary £140 per annum, with apartments and usual resident allowances.

Maidstone, West Kent General Hospital.—Assistant House Surgeon, unmarried. Salary £100 per annum, with board, lodging, &c.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester Education Committee.—Female Assistant School Medical Officer. Salary £300 per annum.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester, Monsall Fever Hospital.—First Medical Assistant. Salary £225 per annum, with board, lodging, and washing

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester Royal Eye Hospital.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

Manchester Royal Infirmary.—Five Junior House Surgeons for three months. Board, residence, and laundry provided. Also Two Senior House Surgeons for six months, and Five House Physicians for three or six months, all unmarried. Salary at rate of £40 per annum, with board, residence, and laundry.

Manchester, St. Mary's Hospitals for Women and Children.—House Surgeon for Children's Department and House Surgeon for Obstetrical and Gynæcological Departments for three or six months. Salary at rate of £70 each per annum, with board and residence.

Metropolitan Ear, Nose, and Throat Hospital, Fitzroy-square, W.—House Surgeon. Salary £150 per annum.

Mount Vernon Hospital for Consumption and Diseases of the Chest.—Assistant Physician.

Newcastle-upon-Tyne Hospital for Sick Children.—Senior Medical Officer and Junior Medical Officer for six months. Salary £100 and £80 per annum respectively, with board, lodging, and laundry.

Newport (Mon.), Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

Northampton County Asylum, Berry Wood.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

Nottingham General Hospital.—Assistant House Physician and Assistant House Surgeon for six months. Salary at rate of £100 per annum each, with board, residence, and laundry. Also Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

Otago University, New Zealand.—Professor of Clinical Pathology. Salary £600 per annum.

Portsmouth Royal Hospital.—House Surgeon for six months. Salary £90 per annum, with board, &c.

Preston Royal Infirmary.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

Putney Hospital, Putney Common, S.W.—Resident Medical Officer. Salary £150 per annum, with rooms, board, and laundry.

Reading, Berkshire Education Committee.—Assistant Medical Inspector of Schools. Salary £300 per annum.

Ryde, Royal Isle of Wight County Hospital.—Resident House Surgeon, unmarried. Salary £115 per annum.

Rotherham Hospital.—Assistant House Surgeon. Salary £125 per annum, with board, lodging, and washing.

Royal Waterloo Hospital for Children and Women, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

Royal Westminster Ophthalmic Hospital, King William-street, West Strand, W.C.—Radiographer, part time only. Salary 25 guineas per annum. Also House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, and laundry. Also Assistant House Surgeon. Salary (non-resident) £20 for six months, with part board.

St. Marylebone General Dispensary, 77, Welbeck-street, Cavendish-square, W.—Honorary Anæsthetist to the Institution and Anæsthetist to the L.C.C. School Dental Clinic. Also Honorary Gynæcologist, Temporary Honorary Ophthalmic Surgeon, and Honorary Medical Radiographer.

St. Mary's Hospital for Women and Children, Plaistow, E.—Female Resident Medical Officer and Female Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

St. Pancras Dispensary, 39, Oakley-square, N.W.—Resident Medical Officer, unmarried. Salary £105 per annum, with residence and attendance. Also Honorary Physician and Ophthalmic Surgeon.

St. Pancras South Infirmary, Cook's-terrace, Pancras-road.—Senior Assistant Medical Superintendent, &c. Salary at rate of £175 per annum, with board and apartments.

Salford Royal Hospital.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

Salisbury (General) Infirmary.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

Scarborough Hospital and Dispensary.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

Sheffield, East-End Branch of the Children's Hospital.—House Surgeon. Salary £120 per annum, with board and residence.

Sheffield Royal Infirmary.—Two House Surgeons and Assistant House Physician for six months. Salary £100 per annum each, with board and residence.

Shipston-on-Stour Union.—Public Vaccinator.

Southampton Free Eye Hospital.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

South Shields County Borough.—Assistant School Medical Officer and Assistant Medical Officer of Health. Salary £300 per annum.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing,

Staffordshire County Council, Cheddleton Mental Hospital, Leek.—Junior Assistant Medical Officer. Salary £270 per annum, with quarters, board, washing, and attendance.

Stirling District Asylum, Larbert, N.B.—Female Third Assistant Medical Officer. Salary £140 per annum, with board, &c.

Stroud General Hospital.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.

Sunderland County Borough Education Committee.—Assistant School Medical Officer. Salary £300 per annum.

Sunderland Royal Infirmary.—Junior House Surgeon. Salary £100 per annum, with board, residence, and laundry.

Swansea Union.—Resident Assistant Medical Officer. Salary about £295 per annum.

Taunton, Taunton and Somerset Hospital.—Senior House Surgeon and Assistant House Surgeon. Salaries £120 and £80 per annum respectively, with board, lodging, and laundry.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

Wakefield, City of.—Temporary Medical Officer of Health. Salary £250 per annum.

Walsall and District Hospital.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

Warrington Infirmary and Dispensary.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

West Ham and Eastern General Hospital, Stratford, E.—Senior House Physician. Salary £120 per annum, with board, residence, and washing.

Westmorland Consumption Sanatorium and Home, Meathop, Grange-over-Sands.—Second Assistant Medical Officer. Salary £175 per annum, with apartments, board, and laundry

West Riding County Council.—School Oculist. Salary £350 per annum.

Whitehaven and West Cumberland Infirmary.—House Surgeon. Salary £150 per annum, with board and attendance.

Wolverhampton Union Workhouse.—Resident Assistant Medical Officer and Medical Officer of Cottage Homes, unmarried. Salary £250 per annum, with apartments, rations, &c.

Worcester County and City Asylum, Powick, near Worcester.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Colchester, in the county of Essex.

New Addresses.

Hart, Neville, M.A., M.D. Cantab., Exeter Lodge, Exeter-road, Bournemouth. Telephone 1471.

A fee of 2s. 6d. is charged for the insertion of Notices of Change of Address, which must not exceed two lines.

Births, Marriages, and Deaths.

BIRTHS.

Dick.—On Oct. 3rd, at 6, West-street, Scarborough, to Dr. and Mrs. J. R. Dick—a son.

Neave.—On Oct. 7th, at St. Osyth, Colchester, Essex, the wife of Lionel Digby Neave, B.A. Oxon., M.R.C.S., L.R.C.P., of a son.

DEATHS.

Pern.—On Oct. 12th, at Botley, Hants, Alfred Pern, F.R.C.S., L.R.C.P., aged 70 years.

Rayner.—On Oct. 11th, at Brighton, after a short illness, Herbert E. Rayner, F.R.C.S., late of Camberley.

Notes, Short Comments, and Answers to Correspondents.

During the continuanee of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

THE CAMPAIGN AGAINST TUBERCULOSIS.

No doubt the chief means of combating the spread of tuberculosis is by the education of the patients and their friends. This object is in part carried out by the employment of well-trained health visitors to visit the homes of the patients so as to impart the necessary instruction and to render the living rooms as healthy as the circumstances will permit. The psychological factor, however, cannot be eliminated, and it will be found in actual practice that the patients will demand some treatment in the form of medicine. It is extremely difficult to convince them that anything can be done without the visits of a doctor. A medical officer will be found to be essential to control the treatment and further to instruct the patients as to their general mode of life.

A central institute of some kind, therefore, is necessary, where patients can apply in the first instance, and those able to come up for observation should do so, as it would be most difficult for one medical officer to visit regularly all the patients in their homes. Further, the examination of contacts would form a most important part of the scheme, and many of these could attend at the institution. At the same time, however, the institution (dispensary, or whatever it may be called) need be only of the simplest character, a waiting-room and consulting-room, which could be used as an office when the medical officer does not require it, being all that is really needed, although a room set apart for the examination of sputum is to be desired. The drugs required will be few in number. The value of tuberculin injections administered to ambulatory cases has not been definitely determined, and it would be unwise to discard them altogether.

To sum up: In any municipal scheme, properly trained health visitors to visit the homes of the patients are absolutely essential. A medical officer with special experience in tuberculosis is equally necessary, whilst the "dispensary" can be of a very simple character. Further, such an institution should be in touch with a hospital, where cases of a doubtful character might be admitted for purposes of diagnosis.

CUSTOM AND COURTESY.

To the Editor of THE LANCET.

SIR,—I was asked recently by the Prudential Assurance Company to examine and report on the health of two panel patients in this town, the name which I do not give except to you. I wrote to the two doctors in question stating that I had been so requested, and that I should be pleased to meet them. Neither replied, and I examined and reported in due course. I take it that it will not be necessary for me to write to either of these medical men again if I am asked to examine other of their patients.

I am, Sir, yours faithfully,

D.

Oct. 13th, 1914.

⁂ We recommend our correspondent to send the notifications which courtesy demands, whether the courtesy is reciprocated or no. Mr. H. Bazett's letter in THE LANCET of Sept. 5th, p. 680, should be read.—ED. L.

A SAFEGUARD IN THE DARKENED STREET.

TRAFFIC at night, both vehicular and pedestrian, is becoming increasingly difficult and dangerous owing to the very limited lighting arrangements imposed upon us by military necessities. Accidents have already been recorded, and we make bold to offer a suggestion to our authorities, which, if acted upon, would, we think, lessen these dangers without being of any advantage to the enemy. In streets or crossings where there is considerable traffic we suggest that the kerbing of the pavement should be whitewashed. This plan was adopted on the edge of the platforms some years ago by the Underground Railway with great advantage to the public and a reduction of the accident list.

Some of our streets are so dark that it is difficult to see where the pavement ends and the road begins. Such a plan, surely, would be of great assistance to the public and to vehicular traffic also, and its adoption would, we imagine, entail little expense. We quite see that the whitewashing would require frequent renewing, and we only suggest that the process should be employed in selected spots.

A QUOTATION IN SEARCH OF A FATHER.

To the Editor of THE LANCET.

SIR,—I have been unable before this to express my thanks to Dr. H. P. Cholmeley for his letter in THE LANCET of Sept. 26th in answer to my inquiry. It has introduced me to a very amusing book which I had never seen before, and incidentally to some wonderful derivations. Moreover, his reference to Upper School days suggested to me the source whence I got the quotation in question. It is given in Macleane's Horace, Sat. II., iv., in a note on the words, "pratensibus optima fungis Natura est: aliis male creditur." But the place is not a library at Vienna, but a monastery at Vallombrosa.—I am, Sir, yours faithfully,

EDWIN A. EADE.

United University Club, Pall Mall East, S.W.,
Oct. 7th, 1914.

FLY LARVÆ IN MANURE.

THE United States Department of Agriculture has recently experimented with a view to finding a non-poisonous substance which should be destructive to fly larvæ and have no injurious effects on manure. Among the substances tested were kerosene, iron sulphate, potassium cyanide, formaldehyde, calcium cyanamid, pyroligneous acid, common salt, copper sulphate, lime-sulphur mixture, Paris green, sodium fluorid, several proprietary disinfectants, and borax. Commercial borax was found to be the most effective, practical, and economical, and the weekly bulletin of the Chicago Department of Health gives the following directions for its use. Apply 1 lb. of borax to every 12 bushels (15 cubic feet) of manure immediately on its removal from the barn. The borax should be applied particularly around the outer edges of the pile with a flour sifter or other fine sieve, after which two or three gallons of water should be sprinkled over the borax-treated manure.

BETEL AND COCAINE.

To the Editor of THE LANCET.

SIR,—With reference to a recent paragraph entitled "Misri and Supari," referring to supari (betel nut) being supplied as a masticatory to the natives of India, I would point out that if our Indian troops spread the use of betel nut chewing as a habit a warning may be necessary. Your own India correspondent has said that at one time in Calcutta the drug (cocaine) was sold in two-pice packets and was retailed almost openly by the army of betel sellers. The betel sellers, it appears, put 1 grain of cocaine into the other ingredients of the *pan* (the *pan* is the betel leaf), so that many persons who would be most indignant if charged with being cocaine eaters are gradually acquiring a taste for the drug unknown to themselves.

I am, Sir, yours faithfully,
London, Oct. 10th, 1914. OBSERVER.

CHEMICAL INDUSTRIES.

THERE have been several references in the daily press recently to the German chemical industries. A few facts and figures taken from the German Year Book for 1914 show the strides that Germany made during the past 33 years. For instance, in 1880, their exports of chemical products were valued at £11,850,000, and in 1913 at £47,820,700. The number of employees doubled since the year 1895, being now over 280,000. The exports were made up of the following chemical products: chemical bases, acids, salts, £18,854,400; colours and dye stuffs, £13,402,200; varnishes, lakes, cements, &c., £367,900; ether, alcohols, essential oils, perfumery and cosmetics, £2,220,200; artificial manures, £2,710,600; explosives, £3,702,700; other chemical pharmaceutical products, £5,062,800. The editor says: "It is gratifying to see that the chemical industry enjoys great prosperity. The 308 joint stock companies in 1912 commanded a paid-up capital of £33,310,000, with reserves amounting to £9,920,000. The average dividend 13·95 per cent. was the highest in all branches of trade, except insurance."

ANTITYPHOID INOCULATION.

AS there is so much discussion at the present juncture over the question of antityphoid inoculation for soldiers it may be worth mentioning that in Mr. Stephen Paget's new book, "Pasteur and After Pasteur," there is a good summary of the subject on pp. 128-35. Particularly forcible is the instance of the epidemic of 1912 in the barracks at Avignon, in which out of 2053 men 1366 were protected and 687 were not. In the unprotected minority there occurred 155 cases with 21 deaths; in the protected majority not one case, though living as they did in conditions otherwise precisely identical, they ought on that basis to have had 308 cases with over 41 deaths.

MOONSTRUCK.

To the Editor of THE LANCET.

DEAR SIR,—I beg to inform you that I have discovered a theory regarding Lunacy, which will if true cure all Lunatics. It is caused by the attraction of the moon which draws all the blood to the head and causes conjestion. The heart being weak is unable to pump blood away.

If stimulents were given a cure would be the result.

Yours truly,
Great Northern Hotel, King's Cross. JAS. S. LEE.

⁂ The above letter reached us by registered post with the postmark "Redcar."—ED. L.

PRUSSIAN MILITARY STEP.

THE military step, or tempo, or rate of marching is interesting from the point of view of the rate of fatigue of troops. In the eighteenth century the step was usually reckoned as 63 centimetres long and 80 to the minute in ordinary marching, with 140 to the minute for the "double step." In the Prussian orders for 1847 this was altered to 108 steps for the ordinary march and 120 for the bayonet charge, and each step of 75 centimetres long. Later it was altered to 112 steps for the ordinary march. Now the step is usually 80 centimetres long, 112 per minute for the ordinary pace, 120 for the accelerated pace, and 165 to 175 steps per minute each of one metre in running. What the rate of retreat is in cases of necessity is not defined.

WANTED—SUGGESTIONS FOR TREATMENT.

To the Editor of THE LANCET.

SIR,—May I ask for advice through THE LANCET on treating the following case: A heavy woman, 44 years of age, has pain in one heel on pressure and when standing or walking, not when resting or in bed. Any suggestions will be much appreciated.—I am, Sir, yours faithfully,

Chelmsford, Oct. 13th, 1914. JOHN L. MARTIN.

MISSING.

Joseph George Hole, a postman, of Chobham, Surrey, was last seen at Brighton on July 6th. The parents think that perhaps their son may be in some place ill, and would be obliged if any doctor could give them information of his whereabouts. The missing man is described as follows: age 36, height 5 ft. 8 in., fresh complexion, dark hair and moustache, false teeth, first two fingers of right hand deformed. It is thought that he may be suffering from loss of memory. Information may be given to the police at Chobham.

ENGLISH-MADE MEDICINALS.

Messrs. Burroughs, Wellcome, and Co. announce that they are able to supply cocaine and cocaine hydrochloride manufactured throughout at their "Wellcome" chemical works at Dartford in Kent. They also prepare at the same place ernutin (the essentials of ergot) and a series of glycerophosphates, the calcium, iron, magnesium, potassium and sodium salts.

AN INSURANCE PHARMACOPŒIA.

AN addition to the crop of Insurance Act literature is "Standard Prescriptions for Insurance Practice," by Dr. C. H. Gunson, of the Isle of Ely Insurance Committee. It is a useful little formulary with the ordinary type of collyria, gargles, lotions and sprays, and mixtures, pills, ointments, powders, &c. There is evident rather a tendency to polypharmacy, prescriptions containing six or seven ingredients being fairly frequent. It is thought that the adoption of a book of this character by doctors and dispensers will save much tedious writing. That may benefit the doctor who uses it, but unless all the panel doctors in the locality agree in the selection of the same formulary the chemist's time would seem to be fully occupied in hunting up each particular doctor's formula and making up the particular brand of, say, mistura bismuthi ordered therein. To be a real time- and effort-saver to both chemist and doctor the formulary must be generally used, and that is hardly likely to be the case unless it is drawn up by common consent by the local practitioners or is selected for use by authority. Dr. Gunson's little book is published by the Scientific Press, Limited, and the price is 1*s*.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

LONDON DERMATOLOGICAL SOCIETY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY.—4.30 P.M., Clinical Cases. 5 P.M., Resumed Discussion on Some Points in the Treatment of Syphilis.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.15 P.M., Exhibition of Clinical Cases.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

MONDAY.—4 P.M., Harveian Oration:—Sir R. Douglas Powell.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Museum Demonstrations for Advanced Students and Medical Practitioners:—

MONDAY.—5 P.M., Mr. S. G. Shattock: Specimens illustrating Carcinoma.

WEDNESDAY.—5.30 P.M., Mr. J. F. Colyer: Specimens of Injuries to the Jaws and Teeth of Animals.

FRIDAY.—5 P.M., Prof. A. Keith: Specimens illustrating Gunshot Injuries of the Limbs.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 10 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.–10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. R. Russell: Paralysis of Cranial Nerves.

FRIDAY.—3.30 P.M., Lecture:—Dr. A. Turner: Clinical Cases.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

THURSDAY.—ANCOATS HOSPITAL, Mill street.—4.30 P.M., Mr. H. Platt: Tuberculosis of the Spine.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—MESSRS. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 14th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 8	30·326	S.E.	...	83	61	46	46	48	Foggy
,, 9	30 246	S.W.	...	98	64	48	49	51	Overcast
,, 10	30·150	N.	...	89	61	57	52	54	Fine
,, 11	30·130	S.E.	...	87	59	48	49	52	Cloudy
,, 12	30·170	S.E.	...	71	59	43	45	46	Hazy
,, 13	29·704	S.E.	0·10	61	55	46	48	50	Cloudy
,, 14	29·790	N.E.	0·04	56	54	50	51	52	Raining

The following magazines, journals, &c., have been received:— Tropical Medicine and Hygiene, American Journal of Medical Sciences, Maryland Medical Journal, Archives of Roentgen Rays, Review of Neurology and Psychiatry, Child, St. Bartholomew's Hospital Journal, Edinburgh Medical Journal, American Medicine, Medical Review, Surgery, Gynecology, and Obstetrics, Archives of Pediatrics, Malaria, Post-Graduate, Journal of Mental Science, London Hospital Gazette, South African Nursing Record, South African Medical Record, &c.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Mr. R. J. Albery, Lond.; Dr. F. W. Alexander, Lond.; Dr. Robert Armstrong-Jones, Woodford Bridge; Dr. J. Mitford Atkinson, Lond.; Anglo-American Pharmaceutical Co., Croydon; A. S.; Admiralty, Medical Department of, Lond., Director-General of; Lieutenant-Colonel A. R. S. Anderson, I.M.S., Dacca.

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The Harveian Oration

ON

ADVANCES IN KNOWLEDGE REGARDING THE CIRCULATION AND ATTRIBUTES OF THE BLOOD SINCE HARVEY'S TIME.

"FOR THE LIFE OF ALL FLESH IS THE BLOOD THEREOF."

Delivered before the Royal College of Physicians of London on Oct. 19th, 1914,

BY SIR RICHARD DOUGLAS POWELL, BART., K.C.V.O., M.D., F.R.C.P., LL.D.,
PHYSICIAN IN ORDINARY TO THE KING; CONSULTING PHYSICIAN TO THE MIDDLESEX HOSPITAL AND THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON, ETC.

MR. PRESIDENT, FELLOWS, MY LORDS, AND GENTLEMEN,—Some of us may recall the picture by W. Yeames, R.A., portraying our great master Harvey absorbed in study whilst the battle of Edge Hill, timorously watched by his Royal pupils, is raging within a bowshot. So may we now, perhaps without reproach of cynicism, detach ourselves for an hour in contemplation of some of the beneficent gifts to medicine that have ensued from Harvey's work, whilst we with well-nigh the whole world are steeped to the skies in a war to which science has given the last touch of horror and carnage.

INTRODUCTORY REMARKS.

By the request with which, Mr. President, you have honoured me that I should give the Harveian Oration this year you have placed me under deep obligation, for you have put me in communication with the spirit of Harvey—a great man—as it shines out in his works, as it sheds light upon the thoughts of the centuries that went before, and as it illumines the paths of progress that radiate onwards from his time. And although, Sir, your command is the 258th that has reached the Fellows of this College, yet so numerous are the branches of thought and inquiry that have emanated from Harvey's discovery, as the spreading tree from a single pregnant germ, and so ever living and extending is each branch of that tree of knowledge, that year by year some advancement has been found with a freshness of interest worthy of record in this College. In my respectful response to your invitation I will endeavour to trace the progress and growth of one or two of those branches of knowledge that have emanated from Harvey's root, and have reached our time with their new buds of fresh development, each endowed with a spirit of further growth and increase.

Dr. Edmund Parkes, my revered teacher, in his Harveian Oration, the latest words of his beautiful life, which were read to this College by Sir W. Jenner, commences with the question, Will the name of Harvey be echoed down the stream of time with deathless fame? And his answer is, Yes. Harvey's discovery is a landmark for all time as "one of those cardinal discoveries which lie at the very foundation of physiology and medicine." Parkes proceeds to say: "The full interpretation of this great discovery is even now not given, for we are still painfully learning what the blood does in that marvellous circuit which never ends, yet ever recommences."[1] It is this theme of what the blood does that I would wish chiefly to pervade my address to-day.

Sir W. Church observes that although the knowledge of anatomy reached a considerable degree of perfection at the hands of Aristotle, Galen, and later in the sixteenth and seventeenth centuries, of Silvius, Vesalius, Fallopius, and Fabricius, yet, "from the time of Aristotle to that of Harvey no advance was made in physiological knowledge, if indeed it had not receded, and that as Aristotle must be regarded as the first of the biologists, so Harvey was the founder of physiology."[2] The late Dr. Ogle remarks: "And upon Harvey's discovery as a new 'primum mobile' rests, in fine, all our knowledge of pathology, and much of our knowledge of the action of remedies."[3]

The Master Mind and Scientific Discoveries.

The visitation of genius may in a sense be defined as a divine touch in a ready environment. We do not know at exactly what period Harvey attained the conception that quickened and directed his life's work. Dr. Ogle was very right in disputing the statement of Willis that the discovery of the circulation came fully from him. "This view," Ogle continues, "cannot be held. The discovery was, like all other scientific discoveries, the result of the growth of germs sown long before. It was not the work of one mind."[4] True; but it required the master mind of Harvey to collect and collate the numerous detached observations of his teachers and contemporaries to a discovery he had already adumbrated. Such is the case, perhaps, with regard to all epoch-marking discoveries: Newton's conception of gravitation, Priestley's oxygen, Simpson's anæsthetics, Lister's antiseptic system, Koch's discovery of the bacillus tuberculosis were all effected in an atmosphere of thought and experiment highly charged with expectation and speculation in the direction of the particular discovery.

It is said by the Psalmist, "When the breath goeth out of a man he returns to his dust and all his thoughts perish." But whilst the man may think no more, his thoughts live for good or evil to strive with other thought in the sentient atmosphere that gathers about the centres of civilisation and progress.

> Our thoughts are ours, their ends none of our own.[5]

Harvey's sentient atmosphere was shared by great anatomists and ardent pioneers of thought. Servetus had already described correctly the circulation through the lungs, although Harvey never saw his work. This fecundity of thought is finely expressed by Shakespeare in the words of King Richard—

> My brain I'll prove the female to my soul;
> My soul, the father; and these two beget
> A generation of still breeding thoughts,
> And these same thoughts people this little world;
> In humours, like the people of this world,
> For no thought is contented.[6]

The Character of Harvey.

It is unnecessary again here to describe—as has often been done—the features and character of Harvey. It must be said, however, that he was a man dominated by an ardent and imperious spirit. His mind was naturally practical and forward looking—a mind educated by wide culture and reading from the old authors, especially Aristotle, Hippocrates, and Galen. He read all with his critical faculty well awake; and in regard to physiology and medicine, which were the objects of his life's work, he accepted nothing on mere authority, but by logical analysis and by actual experiment tested all the conclusions which interested him. His outlook was ever onward from laboriously accredited or discovered facts to the conclusions to which they pointed and to the fresh inquiries and experiments they might prompt. In this respect he was in marked contrast to his great contemporary in this College, Sir Thomas Browne; and I say this in no disparagement to Sir Thomas, who was indeed Harvey's superior in scholarship. The two minds were essentially different—the one contemplative, retro- and introspective, the other practical, inquiring, strenuously objective and forward-looking; each is supplemental to the other, but perhaps an impetus was given to the objective order of mind with the revival of learning under conditions of increasing freedom from the restraint of ecclesiasticism. We are fortunate in having both classes of mind present with us to-day. We may in our own College recall the names of Linacre, Sir Thomas Browne, Richard Mead, and Caius for their purity of language and enrichment of literature from the stores of traditional learning; whilst those of Harvey, Sydenham, Willis, Bright, Addison, Jenner, and Jackson may be especially remembered amongst the great pioneers and teachers of medicine.

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[1] Harveian Oration, 1876, E. A. Parkes.

[2] Harveian Oration, 1895, Sir W. Church, pp. 14 and 15.

[3] Harveian Oration, 1880, John W. Ogle, p. 28.

[4] Ibid.

[5] Hamlet, Act II., Scene 2.

[6] King Richard II., Act V., Scene 5.

Not only in medicine but equally in other sciences—including political science—may this characteristic, pregnant of the future, be observed. As instances of recent pioneers of action may be mentioned the names of Lord Strathcona, Cecil Rhodes, and Joseph Chamberlain, amongst others, who were "for ever moving forward with reverence for the past, with care to guard its great traditions, but ever seeking in the future something better, something nobler, something greater than that which we now enjoy."[7]

The Medical Profession and New Discoveries.

We hear it often said of the medical profession that new discoveries are met by captious criticism and ungenerous distrust. This has been the subject of comment by many Harveian orators. Sir James Alderson remarks in reference to the obstruction and neglect with which Harvey's work was greeted: "Yet it may be questioned whether difficulties in the establishment of any new truth ought to be esteemed a hardship. New knowledge must be proved; and too facile acceptance can be wished for only by promulgators of error."[8] Sir Edward Cook in his "Life of Florence Nightingale" makes the remark: "Controversy is perennial between those who ascribe the course of political or social history mainly to great men, and those who ascribe it rather to streams of tendency. It is less open to controversy to say that the great men who leave the more permanent mark upon history are those whose genius conforms to the spirit of their time, but who are yet a little in advance of their age."[9]

Controversy quickens thought and strengthens understanding, and all great pioneers, like Harvey, Darwin, Spencer Wells, and Lister, have shown their recognition of this truth. This is the true attitude, especially for pioneers in medical science. No one in a grave and responsible profession can expect to promulgate a new doctrine carrying with it, it may be, fateful results to human beings, without being prepared to sustain with equanimity the ordeal of ardent criticism, to suffer patiently even the obstruction of fools, until he can convince by demonstration the minds of all. Harvey has given to us a great lesson on this patient striving with criticism, pursuing his arguments without bitterness, and strengthening them to conviction with sweet and laborious persuasiveness.

The Origin of Life.

Harvey speculated much on the immediate source of life. He recognised, however, its general origin in ova, and presumes that this may still be so in even the minutest organism far beyond his vision. "Let physicians therefore cease to wonder at what always excites their astonishment—namely, the manner in which epidemic contagions and pestilential diseases scatter their seeds and are propagated to a distance through the air, or by some 'fomes' producing diseases like themselves in bodies of a different nature and in a hidden fashion silently multiplying themselves by a kind of generation (until they become so fatal), and with the permission of the Deity spread destruction far and wide amongst man and beast; since they will find far greater wonders than these taking place daily in the generation of animals."[10]

He thus clearly recognises the generative elements in minutest nature, and he is not disposed with Hamlet at the same time to admit and to question "if the sun breeds maggots in a dead dog being a God kissing carrion," but frankly recognises the germinative edict of the Creator "as if it were said by the Almighty 'let there be progeny' and straight it is so." "A superior mind and more divine agent than man," he later on observes, "therefore appears to engender and preserve mankind, a higher power than the male bird to produce a young one from the egg ...... to none can these attributes be referred save to The Almighty first cause of all things, by whatever name this has been designated—the Divine Mind by Aristotle; the Soul of the Universe by Plato; the Natura Naturans by others; ...... by ourselves, and as is seeming in these days, the Creator and Father of all that is in heaven and earth, on whom animals depend for their being, and at whose will and pleasure all things are and were engendered."[11]

SOURCE OF CARDIAC ENERGY.

Since Harvey dispelled the views of Hippocrates, Aristotle, and Galen, which prevailed for 2000 years, that the operative force of the heart was in diastole, opinions have alternated as to the source of cardiac energy. Harvey did not discuss the matter, but observing the contractile spot as the motor force of the circulation at the fourth day of the life of the chick *in ovo* assumed it to be an intrinsic rhythmic function of the ventricle. Some observers, with Haller, agreed with Harvey's view that it was intrinsic in the cardiac muscle. Others, with Legallois (1812) and Remak, have regarded it as derived from nervous stimulation either from outside the heart or originating in ganglia first discovered by the latter observer within the heart in 1844, at about the time that the brothers Weber demonstrated the restraining influence of the vagus upon the heart. Gaskell in 1881 again demonstrated this myogenic activity of the heart, and he regarded the ganglia within it as inhibitive. This view was strengthened by the later researches of Engelmann, and it is now generally agreed that the ganglia and nerves of the heart with their corresponding centres are for the purpose of regulating the functions of that organ.

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[7] Speech by Mr. Austen Chamberlain, Morning Post, July 10th, 1914.

[8] Harveian Oration, 1867, J. Alderson.

[9] The Life of Florence Nightingale, by E. T. Cook, vol. i., p. 442.

[10] The Works of W. Harvey, M.D., by Robert Willis, M.D., p. 322.

[11] Ibid., p. 402.

The Rhythmic Function of the Heart.

After careful observation on the hearts of tortoises Harvey concluded that the automatic rhythm of the heart's contraction commences at the venous end, spreading to the auricle and then to the ventricle in a very definite manner. Purkinje, Kölliker, Gaskell, Kent, Tawara, and Keith and Flack, with all the wealth of research at their command, would seem to justify this general view; and they have further shown that there are in the heart centres of neuro-muscular tissue more embryonic in character than the adjacent textures, and which are in continuity with a bundle of fibres, the band of His. This band, dividing above the septum, distributes branches throughout the subendocardium, the fibres of which are identical with those described by Purkinje and minutely examined by Kölliker and terminate mainly in the papillary muscles of the ventricles. Only the elaborate methods and instruments of modern physiology could have elucidated these important points.

It is then evident that the rhythmic function of the heart muscle is a coördinated neuro-muscular force still inherent in the sino-auricular and auricular nodal sarcoplasm and carried onwards by the auriculo-ventricular band; it is a survival of the neuro-sarcoplasmic function of the heart before any extrinsic nervous system existed, exhibited in the first contractile spot of the chick noted by Aristotle and so closely investigated by Harvey; and that the extrinsic nervous mechanism of the heart has been gradually developed as the requirements of the organism have become more complicated. The continuity and incorporation of this more elemental neuro-muscular tissue with the striated fibres of the heart is beautifully shown in some of the illustrations in Tawara's monograph (Plate IV., Figs. 6 and 5). Thus the myogenic and neurogenic views of the heart's action have become, we may hope, finally merged and reconciled.

That the first beat of the heart is really ventricular, as concluded by Harvey from his observations of the chick at the fourth day, is not altogether improbable, although Harvey himself in later observations of the tortoise describes vermicular movement extending from the sinus venosus and completed by the ventricular systole. It is interesting to note in this connexion an observation by Dr. Pavy,[12] which is referred to in the late Professor Rolleston's Harveian Oration (1873), pointing out that in the dog a sudden impulse is given to the auricles by the violent contraction of the ventricles which appears to start their vermicular contraction. It may seem little more than a matter of account whether the heart's action initiates with ventricular systole, the shock of which starts the mechanism of diastolic filling, or whether it is a vermicular action culminating in a powerful systole. A practical interest is, however, given to the question by comparatively recent observations with the electric cardiograph, which show that the auricles are not infrequently put completely out of action, as in the auricular fibrillation described by James Mackenzie and figured in the electrical tracings of Hill, Lewis, and others; and yet the circulation goes on by ventricular action alone, the auricles being converted into mere passive tubes.

Much valuable work from a therapeutical point of view was done in Ludwig's laboratory and by the late Dr. Ringer in discovering the effect of certain saline solutions, especially the chlorides of sodium, calcium, and potassium, in maintaining the irritability of cardiac muscle. A certain mixture of these salts for this purpose is still known as Ringer's saline solution.

The Reaction of Cardiac Muscle.

Amongst the differences in the reaction of cardiac muscle and skeletal muscles to stimulus there is one which is no doubt of some importance, but to which a misleading prominence is given in most text-books of physiology. It is known as the "all or nothing law" of Bowditch. It was found by Bowditch and Ranvier that a portion of muscle detached from the heart of a frog, when electrically stimulated, contracts at once with its full power and that a stronger stimulus will not have any further effect, differing thus from the graduated force of contraction of skeletal muscle according to strength of stimulus, and the conclusion is drawn that if the heart contract at all its contraction is maximal, "for all it is worth."

Even if this observation be trustworthy it will not apply to the living heart under vital conditions of innervation. As pointed out in Howell's "Textbook of Physiology" (p. 573), "numerous observers have called attention to the fact that the vagus fibres may also cause a weakening in the force of the beat as well as a slowing in the rate, or, indeed, the two effects may be obtained separately." In no other organ of the body is there a more manifest reserve of functional power to meet the exigencies of varied conditions of effort, of arterial resistance, of emotion, of sudden or gradual valvular defect or other vicissitudes of life.

It is to be noted that later observations have disclosed another peculiarity of heart muscle unknown to Bowditch at the time of his experiments—namely, that at the time of contraction the heart muscle is "refractory" to further stimulus. It is possible that this fact may vitiate the conclusions drawn from electrical stimulation of heart muscle, and I do not know whether it has been allowed for.

EFFECT OF LUNG ELASTICITY ON THE CIRCULATION.

In addition to the driving power of the ventricles, roughly recognised as equivalent to 6 and 3 inches Hg respectively, there are certain further aids *a tergo* to the circulation which may be briefly enumerated. They are partly sustaining and partly supplementary. The driving power is sustained and carried on with least possible loss (1) by the elastic recoil of the great vessels upon their closed valves; (2) it is said (Lauder Brunton and T. D. Lister) that there is a certain rhythmic or rather peristaltic contraction of the smaller vessels which has some slight effect in propelling the blood through the veins; (3) the larger veins being sheathed with their corresponding arteries are compressed with each arterial systolic expansion, and the blood restrained from back flow by the valves is thus propelled onwards towards the heart; (4) during exercise the contraction of the limb and trunk muscles compresses the venules and larger veins and similarly urges on the venous current; and (5) the compressing effect of abdominal, perineal, and diaphragmatic muscles under various twisting, bending, and straining movements has the same influence upon the great reservoirs of blood in the abdominal veins, the direction of all these forces being determined by valves.

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[12] Medical Times and Gazette, Nov. 21st, 1857, p. 521.

It is a matter for great regret that Harvey's observations on respiration and the greater part of his observations on medicine have been lost through destruction by fire and the malice of a political mob. It is hardly likely that with his extraordinary perceptive powers he could have failed to note and to comment upon the *vis a fronte* aid to the circulation which is derived from the aspiratory traction of the lung elasticity upon the mediastinal space.

Physicians and anatomists before Harvey's time regarded the lungs as a power in the movement of the blood, but they erroneously thought that blood and air were impelled to the heart by the compression of the lungs in the act of expiration. Perhaps even modern physiologists and clinicians have not fully grasped the agency of the elastic traction of the lungs as a constant force of low tension, increased with every inspiratory movement, diminished but not wholly extinguished during expiration, tending always to attract blood through the central veins to the heart cavities, and thus steadily and perpetually aiding the venous return.

The Dynamics of Respiratory Movements.

Up to and at the time of Hutchinson's well-known paper read before the Royal Medical and Chirurgical Society in 1846 the dynamics of respiratory movements were not rightly formulated. Hyde Salter, a Fellow of this College, who first pointed out in 1865 that the elasticity of the ribs was in ordinary breathing a factor in aid of, not against, inspiration, had had his attention especially drawn to the mechanism of respiration by his own sufferings from asthma. This traction of the ribs in aid of inspiration—as I have endeavoured to point out—is throughout the respiratory act never entirely lost in calm breathing, although it tends to become neutralised as the chest enlarges with inspiration. Salter pointed out that in the cadaveric position of expiration there was an outspring of the ribs when released from the traction of the lungs equal to 1/100 inch or 0·25 mm. Some experiments I made in 1876 led me to regard this outspring as equal to from 1·6 to 3 mm. Hutchinson, and later Burdon Sanderson, estimated thoracic expansion in ordinary breathing at about 1·6 mm. Hence practically the thoracic movements in ordinary breathing oscillate within the range of thoracic outspring, leaving this factor constantly on the side of the inspiratory forces. The diaphragm, attached like a bowstring to the elastic margin of the thorax, is similarly held in a state of arched tension by the traction of the lungs.

The result of this elastic mechanism is that the respiratory act in both directions commences with perfect automatic smoothness and imperceptibility. Another effect is to protect the lungs from pressure. There are several other important considerations that arise out of this mechanism in diseased conditions of the respiratory organs. But I am concerned now chiefly with the circulation, and especially as it is affected by these agencies having their root in lung elasticity.

The traction exercised upon the mediastinum and those contents of it which are not in communication with the outer air—the heart, arteries, veins, and lymphatics—is estimated as equal to from 4 mm. in expiration to 7 mm. Hg in inspiration.[13] (It has been stated that this effect is not wholly lost even in the peripheral veins, being appreciable in the small veins by the side of the tendo Achillis.[14]) The positive blood pressure within the great veins as they enter the thorax is well-nigh exhausted, and in the lymphatic currents it is still less, so that this *vis a fronte* equivalent to from 4 to 7 mm. of mercury, being in constant action, is of considerable value in drawing onward the sluggish venous current to refill the auricles and ventricles during diastole.

It is said that at the very commencement of diastole the ventricles have a certain suction power supposed to be due partly to recoil, partly to an erectile effect upon the muscle produced by the influx of blood through the coronary arteries. This aid to the refilling of the ventricles is, however, but momentary and slight and probably does little more than help to open the auricular valves.

Influence on the Heart in Disease.

In health the powerful muscular ventricles during systole can easily disregard any impediment to their contraction caused by the negative pressure in the mediastinum. Such impediment can only be noted by fine instruments as a slight lowering of the blood pressure during inspiration.[15] But in cases of failing heart power, and especially when attended with over-distension of the right cavities, the vacillation of systole with each inspiration becomes so marked that the respirations can be easily counted by the remissions of the pulse force. In extreme cases complete failure of the pulse is observed with each inspiration. This phenomenon must be familiar to physicians. I have pointed it out to students and practitioners for many years as an important and ominous sign of failing heart power. In certain conditions it would be an argument in favour of relieving the venous fulness of the right cavities by bleeding, whilst stimulating heart power by strychnia and oxygen.

We bear witness to the value of this *vis a fronte* force in the use of respiratory exercises as an aid to cardiac action and development in feeble, dilated hearts, especially in children, and for the fatigued hearts of adults. We witness clinically the embarrassment which arises in emphysema from the diminished aid from this force to the circulation. Only in extreme and dangerous fluid effusions and pneumothorax does the pulmonary tension, however, become wholly exhausted and the compression of the lung suggested by Galen and apparently accepted by Harvey operative.

The Right Ventricle.—Arteries after Death.

It may be noted that as the systolic work of the right ventricle is distributed within the thorax the pulmonary arterial pressure is not affected by the respiratory mechanism under consideration (except when possibly some fluctuations occur in the capacity of the pulmonary capillaries). The diastolic supply to the right ventricle is, however, greatly aided by aspiration through the great veins.

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[13] Howell's Text-book of Physiology, p. 649. Professor Starling places it at 10 mm. Hg during expiration and even 30 mm. Hg on forcible inspiration.

[14] System of Medicine, Allbutt and Rolleston, vol. vi., Thrombosis, by W. H. Welch, M.D., p. 717.

[15] It must be here remarked that Professor Starling considers that the blood pressure is increased at least during the latter two-thirds of inspiration. He illustrates this view in a diagram, but I am not clear that the diagram represents an actual measurement and venture to think on the clinical grounds above stated that this view needs further verification. The view adapted in the text is upheld by Leonard Hill. (The Vascular System and Blood Pressure: Further Advances in Physiology, 1909, p. 145.)

Although Harvey pointed out the fallacious inferences drawn by the old anatomists from the supposed occupation of the arteries by air during life he never seems to have denied that the arteries were so occupied after death or realised that only with the first division of an artery by the anatomist's knife is air admitted to them. It is possible that the extreme expiratory contraction of the chest so constantly observed at death is connected with the emptying and collapse of the great intrathoracic arteries and the attempt to restore atmospheric equilibrium. And it is in this connexion interesting to observe that after death the great vessels, when occupied at all by ante-mortem clot, are so occupied by a clot much smaller than their calibre.

INSTRUMENTAL METHODS.

It may be said that the great advances in knowledge respecting the circulation since Harvey's time have been made through the aid of instrumental methods. When the pocket lens of Harvey was replaced by the primitive microscope of Malpighi the capillary link of the circulation which could only generally be assumed by Harvey was demonstrated.

The systemic blood pressure was first roughly but very accurately estimated by the Rev. Stephen Hales (1773), and by simple experiments he also demonstrated contraction and relaxation of the vessels as influencing the output or blood pressure—no small feat in a man of his time and with but little medical training. Next to the general blood pressure the recognition of its local distribution according to the requirements of the different organs was an epoch-making event in the history of discovery, which was inaugurated by the memorable experiments of Claude Bernard upon the chorda tympani nerve in 1851.

The Local Distribution of the Blood.

The fact of such varied distribution to organs and tissues under conditions of emotional and functional stimuli had not altogether escaped Harvey. He commented upon the pallor or flushing of the face under the emotions of self-consciousness, fear, anger, or shame, and he observed that the ears might be red when the face was pale; he was, moreover, aware of some connexion of the nervous system with the local disturbances of circulation caused by irritation. He comments upon the fact in association with stomach and other abdominal irritations, and in his remarks upon the effect in his own person of a poisoned needle puncture clearly shows his appreciation of this agency. Having pricked his hand at one point with a clean needle and at another with one envenomed with spider poison, he remarks: "I could not by my simple sensation perceive any difference between the two punctures; nevertheless, there was a capacity in the skin to distinguish the one from the other; for the part pricked with the envenomed needle immediately contracted into a tubercle, and by-and-by became red and hot and inflamed, *as if it collected and girded itself up for a contest with the poison for its overthrow.*"[16] The careful observations upon Alexis St. Martin perhaps first demonstrated the accession of blood to organs in activity. The importance of nervous control in regulating general blood pressure was more fully recognised by the discovery by Ludwig in 1866 of the depressor nerve as an afferent nerve of the heart which, when stimulated, as by excessive blood pressure within the heart and aorta, caused through the medium of the splanchnic nerve a dilatation of the abdominal arterioles with instant release of intracardiac pressure.

It would take more than one address to illustrate in detail the many results and conditions of flushing and restriction of circulation through the different organs and tissues as required for their individual functions. We now fully recognise how efficiently the blood is held in the grasp of the arterial system, to be distributed here or there in accordance with local needs telegraphed to the nerve centres from the several organs; and our knowledge of the details of this control with regard to individual organs is ever increasing, in witness of which I might quote Dr. Markwalder's and Professor Starling's recent researches showing how the coronary circulation of the heart itself is thus regulated by some local mechanism in accordance with the demands upon its functional capacity.[17] These observers find that the coronary circulation is intimately dependent on the general arterial pressure; that adrenalin causes dilatation of the coronaries, as it raises arterial pressure; that increase of CO_2 in the blood also causes coronary dilatation; and that non-volatile metabolites produced by the heart muscle are potent agents in causing a similar dilatation.

The presence of the same neuro-vascular mechanism in the lungs and brain has long been conjectured by physicians as necessary to explain certain symptoms—apnœic, aphasic, convulsive—which are familiar in practice. Such mechanism has been long and even recently denied, but has been demonstrated to exist by the successive observations of Sir John Rose Bradford, Dr. Bokenham, Sir Lauder Brunton, Roy and Sherrington, Brodie and some others, and affirmed by Sir David Ferrier in his Harveian Oration (1902).

The Use of Instrumental Methods.

Up to recent times instrumental methods were mainly restricted to the laboratory and utilised for experimental researches upon animals. They are now largely employed in the clinical investigation of health and disease. The systematic examination of the urine for albumin and sugar, and still more the quantitative estimation of these substances and of urea, with microscopic examination of urinary and sputum deposits as clinical tests, are well within the time of many of us. The observations of Wunderlich, Ringer, and numerous others with the clinical thermometer have rendered exact the more crude recognition of the older physicians that the body temperature, so wondrously constant under all conditions and vicissitudes in health, is readily disturbed in definite ways by blood ferments and altered tissue metabolism in disease. It must be confessed that these instrumental aids have not always at first been received with the cordiality they deserved by clinical physicians. I can remember one of the pioneers of the clinical thermometer being somewhat petulantly snubbed by a very distinguished physician of that time on producing in a post-mortem room the temperature records characteristic of a case of tuberculosis.

Diseases of the circulatory system have been especially favoured by this combination of laboratory and clinical methods. Observations on the pulse—old as the history of medicine—have been supplemented by the refined methods of the sphygmograph. Again, such instruments as the capillary pressure gauge, the radiographic apparatus, the combined veno- and cardiograph and the electric cardiograph have given us, in association with the stethoscope, a comprehension of the cardiac mechanism and its perversions in disease which is almost complete. Greatly as we are indebted to laboratory investigation for exact knowledge and clinical insight, we must not forget how much has been and is being learned and suggested respecting vital processes by the older and less exact methods of clinical observation. Need I point to the laborious and minute clinical observations by Harvey himself, and his innumerable necropsies and dissections.

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[16] The Works of Harvey, by Robert Willis, M.D., On Generation, p. 431, Sydenham Society, 1847.

[17] Journal of Physiology, vol. xlvii., Nos. 4 and 5. THE LANCET, Feb. 14th, 1914, p. 469,

The Coördinating Control of Clinical Observation.

Whilst fully recognising and rejoicing in the value of instrumental aids we must be careful, then, not to weaken by disuse the coördinating control of clinical observation. The more deeply we study the human mechanism—and where shall we find a more profound lesson than may be drawn from the circulation and properties of the blood—the more we shall be convinced of the complete interrelation of its parts as they have become evolved from one comprehensive bioplasm. Instrumental methods deepen insight and observation at the bedside, whilst ever remaining in reserve for the more thorough investigation of individual cases of obscurity. Unless thus employed, however, in due perspective with the whole clinical phenomena of disease, any one method must prove full of the fallacies inherent in all isolated methods. I would urge, then, a steady maintenance in full efficiency of general clinical observation in correlation with all necessary laboratory and instrumental methods as essential to our right interpretation of disease; for it cannot be doubted that a want of coördination and perspective in the use of the two methods breeds bad physicians and tends to reckless and sometimes harmful treatment. In my humble opinion, Sir, and in this I agree with some previous orators, no institution of lectures has been more valuable to the profession and more in accordance with the spirit of Harvey than those founded by our distinguished Fellow, Dr. Oliver, in memory of the revered teacher of still some of us, Professor Sharpey. Clinical observation and teaching have been encouraged and the dignity of medicine enhanced by the able men who have given these lectures in successive years since 1904. We should never forget that the great physiologist and anatomist and Fellow of this College, whom we commemorate so proudly to-day, was also a great physician and an acute and laborious clinical observer.

(To be concluded.)

Belfast Medical School.—The work of the present winter session of the Medical School, Belfast, began at the University on Oct. 13th, when lectures were resumed, and at the Royal Victoria Hospital on Oct. 16th Dr. V. Fielden, the anæsthetist, gave an opening address to the students on "Suggestion or Psychotherapy," discussing the various views held in reference to that method of treatment. Senators, members of the teaching staff, graduates and undergraduates of the Queen's University were present at a great meeting held in the examination hall of the University on Oct. 21st, "To consider the call of duty in the present national exigency"

SHELL WOUNDS IN MODERN NAVAL WARFARE.[1]

By BRYAN PICK, M.R.C.S. Eng., L.R.C.P. Lond.,
STAFF SURGEON, ROYAL NAVY;
R. A. RANKINE, M.B., B.S. Lond.,
SURGEON, ROYAL NAVY;
AND
J. LAMBERT, M.A., M.D. Cantab., M.R.C.S. Eng.,
SURGEON, ROYAL NAVY.

As up to the time of writing most of the wounded from naval engagements have been landed at the Royal Naval Sick Quarters at Shotley we have thought that a brief account of modern shell wounds with a description of the adopted line of treatment might be of interest.

At the sinking of the *Königin Louise* the guns were 4-inch; shells common or lyddite. These shells are made of forged or cast steel with thin sides. The common shells are filled with gunpowder, while lyddite shells are filled with lyddite, which has picric acid as its chief constituent. In the Heligoland action the same were used with the addition of 6-inch and 12-pounder shells. The shells used by the Germans are probably made of forged or cast steel and filled with tri-nitro-toluene. This T.N.T. is nitrated toluene (C_7H_8) and is similar to lyddite.

The wounded received were the survivors from the *Königin Louise* on August 5th and those who were hurt in the action off Heligoland on August 26th. In the case of the former engagement some were admitted within 16 hours of receiving their wounds, but in some cases it was not until 36 hours had elapsed that it was possible to land them and admit them into hospital. All these patients, many of them badly wounded and suffering from compound fractures and other serious injuries, had been in the water for varying periods and had been rescued by whalers lowered from the attacking ships and subsequently transferred to one of the destroyers. Here they received such first aid as could be given them. These cases formed the first batch of wounded received; the remainder were taken on board the *Amphion* within a short time of receiving their wounds, but on the next day, after she struck a mine, they had to be transferred to a destroyer. In the action off Heligoland the wounded for the most part were transferred from their own ships to the *Fearless* for transport to hospital, and were received in from 24 to 30 hours after the action. Some had been in the water and some had been transferred from the destroyers to the bigger ship. In these actions destroyers and light cruisers were for the most part engaged. In the destroyers first-aid measures alone can be adopted, and even in light cruisers any radical surgery is performed with much difficulty owing to the excessive vibration when the ship is travelling at any speed. We mention these details to show the disabilities which the wounded in action have to put up with at the outset and just during the time that rest and methods for combating shock are most necessary. Accounts of military warfare in South Africa state that some of the patients probably owed their lives to the fact that they were left lying, after the application of a first-aid dressing, where they fell and were not immediately removed to the field hospital. In a naval action, however, this does not obtain, and it is frequently necessary to remove the wounded to a larger ship carrying a medical officer. Everyone knows the difficulty of getting into a small boat; add to this the possibility that a big sea is running and that the patient suffers from a badly shattered lower limb—it will be seen then that the patient's chances may be seriously handicapped by such necessary removal.

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[1] Published by permission of the Medical Director-General of the Navy.

Before closing these brief general remarks we would point out the importance of early medical attention. All cases received first aid in some form or another; those patients received from the destroyers had had their wounds dressed and temporary splints applied. This first aid had been most efficiently carried out by those responsible, but the advantage of more skilled attention from a surgeon, had it been procurable, was plainly shown in one case—namely, that of a man with a badly shattered foot necessitating amputation later. In addition this patient had a deep wound of the muscles of the thigh; evidently there had been free hæmorrhage, for a tourniquet had been applied over the femoral artery, and at the time of admission of the patient this had been on for 36 hours. We mention this in no carping spirit, for the wounded owe a great deal in the way of comfort to the first aid they received. It is a further instance of the trials which they have to undergo. Those who had wounds which received early attention had less suppuration than had those in which it was given later. This was notably the case in those received from the *Fearless* after the engagement off Heligoland.

The Wound Caused by the Shell.

The shell on exploding bursts into pieces of varying size; the larger pieces probably cause more or less instant death. The wounds coming under observation were caused by pieces the largest of which measured about 3 inches by 1 inch. Probably the most severely wounded sank in the water. Wounds from shell come conveniently under the following headings:—

1. *No entrance or exit wound.*—Complete loss of superficial tissue.
2. *Wounds of entrance and exit.*—(*a*) When superficial, involving soft tissues, both wounds may be quite small or exit wound large. (*b*) When involving bone, comminution, and exit track contains fragments; exit wound large, ragged, and funnel-shaped.
3. *Entrance wound only.*—Metal found; if flat, wound is subcutaneous; if bullet-shaped, impacted against bone with fracture or embedded in deep tissues.

The above classification at the best is somewhat arbitrary and cannot include all cases.

Punctured wounds are common and may be caused by splinters. The large wound is generally lacerated, with contused margins. Much of the skin and superficial parts may be missing altogether. The surrounding skin and deeper parts may be seared and burnt. Many cases showed wounds of entrance and exit; some, wounds of entrance only. The shape of a piece of shell had some effect on the depth of the wound. If flat, the wound tended to be subcutaneous; if conical, it was likely to be deeply embedded. In the former class of wound we can call to mind two cases, both wounds of the back caused by large pieces of shell. From the entrance wound a long subcutaneous track ran, and at the bottom of this the piece of shell was found. In one of these cases a small external wound lay just over the shell, giving one the impression that the skin had split over the foreign body. The state of these wounds could easily be accounted for by the extremely sharp and irregular edges of the shell fragment.

Contents of Wound.

Shell may or may not be found. In most cases fragments of serge clothing were also present, and more rarely pieces of linen. In the *Königin Louise's* wounded, many of whom were wearing life-belts, numerous fragments of cork were found together with splinters of wood. When the bone was injured fragments of bone were usually found.

Effects on Special Structures.

(*a*) *Bone.*—For the most part bone is much comminuted and splintered; the fragments may be driven widely among the softer parts and through the exit wound and skin. In two cases—both compound fractures of the femur—there was an oblique fracture with little or no comminution. Whilst on the subject of fractures, one point in the examination of the wound seems worthy of mention—namely, the difficulty of deciding on probing as to whether metal or bone is felt. The old idea of a "ringing sound" appears somewhat fallacious. Possibly the shell is surrounded by fragments of clothing. The use of the finger is much more reliable.

(*b*) *Soft structures.*—Muscles, fasciæ, nerves, and blood-vessels may all be lacerated. Where muscle was affected there was a good deal of superficial necrosis. The condition of the main blood-vessels is of primary importance in deciding as to the necessity for amputation.

(*c*) *Special organs.*—Some cases brought in dead had abdominal injuries. Only one abdominal case came under treatment. This was a case of injury to the kidney which completely recovered. There was one case of depressed fracture of the frontal bone with subsequent subdural abscess caused by a very small splinter. Another case was one of spinal concussion with retention, and, later, incontinence of urine. In this case there was great comminution of the spinous processes and laminæ of the upper lumbar vertebræ, but no evidence of spinal compression. One case of surgical emphysema due to a wound of the apex of the right lung was admitted.

Shock.

In varying degrees this was present in almost all. Contributory causes were nervous excitement, loss of sleep, loss of blood, and the fact that many had been thrown into the water and subsequently rescued.

Hæmorrhage.

Primary.—Owing to the time that had elapsed since the engagements we saw none. Cases were brought in dead where large vessels, such as the femoral, had been severed.

Reactionary.—No cases of this were seen, as most of the patients were still suffering from shock with feeble heart beat.

Secondary.—During the time of the separation of the sloughs it occurred in varying stages, from a general oozing from the wound to bleeding from vessels the size of the thoracic axis and suprascapular arteries and the external saphenous vein. In one case a large abscess cavity was opened up and the bleeding vessel was found running through this with definite ulceration of the vessel wall.

Suppuration.

This occurred in practically every case. The skin, especially of the hands and feet, is grimed with dirt, oil, and coal dust, and stained with the fumes of cordite. Severe laceration of the parts, the entrance of shell, pieces of clothing, and other foreign bodies are contributory factors. As regards clothing, wounds into which serge entered invariably suppurated. In the case of linen the wounds were distinctly cleaner. In some cases shell was only found after the lapse of some weeks, the discovery being due to the formation of an abscess in a place some distance from the original wound. In one case in which the entrance wound was on the outer side of the thigh a hæmatoma developed below the gluteal fold and suppurated some six weeks later. This was opened and a large piece of shell and serge clothing were found in the neighbourhood of the tuber ischii about eight inches from the original wound.

Treatment.

Immediately on arrival a rapid survey of each patient was made. Later a more detailed examination took place and a line of treatment decided on. Cases with severe shock were treated on the usual lines, and no active surgical interference was carried out until signs of primary shock had disappeared. Those requiring immediate operation were found to be a comparatively small percentage. Conservatism in treatment has been the main principle. Even very severe lacerations of limbs were not treated by immediate amputation if the blood-supply was good. As long as the patient was not going down-hill from the condition of his wounds local treatment was persisted in. As an illustration we may instance the case of one who in addition to other serious wounds had a good half of the sole of his foot blown away. On admission what remained was covered by a gangrenous slough. This separated and exposed the metatarsals. However, the wound took on a healthy appearance, and when he left us showed signs of ultimately healing.

Primary examination was made by the X rays. Often, although splinters of shell could be seen, some difficulty was experienced in finding them at the time of operation, especially when embedded in the deeper muscles. Generally the patient was anæsthetised, the wound cleaned, foreign bodies removed, and the wound swabbed with iodine. Suturing of torn muscles and as far as possible approximation of the edges of skin were carried out with the idea of making the wound small. Drainage was generally necessary. In the case of fractures loose fragments were removed; those still attached to periosteum were left, being replaced in position. No attempt at operations such as wiring was carried out in view of the almost inevitable suppuration. Limbs were immobilised in splints, but the subsequent dressing of suppurating wounds greatly handicapped the union of these fractures. For these wounds we found peroxide of hydrogen to be our sheet anchor. It was used in 10 or 20 volumes solution, and was of the utmost value. The usual dressings were sterilised gauze and occasionally fomentations.

Vaccine treatment.—A series of cases were treated with the antisepsis vaccine of Parke, Davis, and Co. in the following doses of ten-fold diluted vaccine—daily doses of 3, 4, 5, 8, 10, 15 minims and 1 c.c.; then injection of 2 minims of undiluted vaccine every three days. (1 c.c. of undiluted vaccine contains 25,000,000 streptococci and 500,000,000 staphylococci.) The cases thus treated showed distinct improvement in lowering of temperature and separation of sloughs more rapidly than in cases not so treated. In cases not under treatment with the vaccine a septic type of temperature continued for from 2 to 3 weeks. It was found in many cases impossible to remove the disintegrated serge except by slight scraping and syringing of the sinuses. Vigorous scraping and probing are contraindicated owing to the danger of causing suppuration in fresh planes. The removal of such débris caused rapid cessation of foul discharge and consequent fall in temperature.

Conclusion.

Owing to local conditions we have been unable to see many of our cases through to the end. For the most part on leaving us the wounds were healthy and only required skin-grafting for their complete cure. It may be that further surgical measures may be necessary for some cases of non-union of fractures. The gap which contained comminuted fragments still attached to periosteum was often one or two inches in length, so that early union of those fractures cannot be anticipated.

Notes of Cases.

Appended are notes on a few typical cases.

Case 1.—Lacerated and contused wound over clavicle; middle third of clavicle comminuted and much displaced. Punctured wounds over right carotid sheath and in right forearm. Fragments of clothing removed from clavicular wound and shell from forearm. Surgical emphysema over lower neck and upper chest for two or three days after admission due to wound of lung, the apex of which could be seen exposed at the bottom of the wound. Some suppuration; healing well.

Case 2.—Admitted with big lacerated wound involving quadriceps muscles of the thigh on anterior and outer aspect. Also a wound 4 inches by 3 inches, with complete destruction of soft parts of sole of left foot down to flexor tendons. Above left ankle two large wounds with compound comminuted fracture of the lower third of the fibula. The right little toe had been shot away at the metatarso-phalangeal joint. Many fragments of clothing, cork, and bone were removed; much sloughing of tendons and muscles with very offensive pus. On leaving hospital wounds much smaller, granulating well, and healing. Secondary hæmorrhage from the peroneal artery in wound above ankle; this was controlled by plugging and pressure.

Case 3.—Compound fracture of right radius and ulna—a large gaping wound with great laceration was present on the upper postero-external surface of forearm and showing complete comminution of the upper two inches of the ulna; radius fractured at the neck. The muscles were much lacerated, but the main arteries were intact. There were also three small incised wounds over the left frontal region of the skull—at the bottom of one there was a slightly depressed star fracture of the left frontal bone. The elbow wound became very septic, necessitating continuous arm baths, and eventually as the patient became semi-comatose amputation in the upper third of the arm was performed and the skull was trephined at the same time. The left frontal lobe was much lacerated by a piece of bone driven in, and the hæmatoma thus formed had begun to suppurate, giving rise to a subdural abscess with secondary cerebral œdema. Owing to the latter a cerebral hernia formed and drainage became difficult. The patient eventually died a fortnight later.

Case 4.—Admitted with a lacerated wound 7 inches long from the right supra-malar region through the lobe of the ear, ending in a deep cavity in the right suprascapular region. The incision severed the parotid gland and branches of the seventh nerve. A large flat piece of shell was removed from the cavity. There were numerous punctured wounds of the right chest, forearm, and hand; fracture of the bases of the second and third metacarpals had been caused through a punctured wound of the hand.

The incised wound was sewn up and a counter opening made for drainage of the cavity in the suprascapular region. Suppuration followed in places, but the final result was good.

CASE 5.—Incised wound 4 inches long across right cheek; smaller wound of right ear. Punctured wounds in front of right shoulder extending to axilla, and behind left shoulder extending to suprascapular fossa. Numerous superficial "splash" shell wounds over both arms, chest, abdomen, and legs. Compound comminuted fracture of proximal phalanx of left second toe. Many small angular pieces of shell were removed from the various wounds. Secondary hæmorrhage occurred about 12 days later from the suprascapular wound which was opened up; an ulcer was found in the wall of the suprascapular artery, giving rise to free hæmorrhage. The artery was tied and the patient rapidly recovered.

CASE 6.—Shell wound in right lumbar region, 2 inches by ¾ inch. A probe passed upwards and inwards for 1½ inches. Hæmaturia followed and lasted for 14 days. Shell could not be seen by X rays. Recovery.

CASE 7.—Oblique fracture of right femur in lower third; compound from a small punctured wound. Another punctured wound in the upper third of the thigh. Extension and Liston's splint used. Six weeks later a hæmatoma was noticed on posterior aspect of thigh; this was opened and found to be suppurating in its deeper part and a large piece of shell with serge clothing removed. Union incomplete on leaving hospital.

CASE 8.—Numerous punctured superficial wounds of scalp, face, arms, abdomen, and back. Deep punctured wound left great trochanter and left great toe, both containing shell. A large lacerated wound was found over upper lumbar vertebræ; this was opened up, and great comminution of the spinous processes and laminæ of the upper three lumbar vertebræ was found. Loose pieces of bone were removed and free drainage given; the spinal dura mater had not been punctured and no symptoms of pressure on the cord were present. Temporary retention of urine, followed by slight incontinence, rapidly disappeared.

CASE 9.—Incised wound 4 inches long on left side of chest exposing costal cartilages; also large superficial shell burn on right chest and incised wound of forehead. The incised wounds were cleaned and sewn up. Compound comminuted fracture of right tibia with large anterior lacerated wound; the tibia was broken into small fragments for 2 inches and the muscles of the anterior group were much lacerated. Loose fragments were removed and the wound cleaned up and partly sewn; progressing well, although still some sloughing of superficial muscles and fasciæ.

Royal Naval Sick Quarters, Shotley.

PYLORIC OBSTRUCTION IN INFANTS.

BY CHARLES H. MILLER, M.D. CANTAB.,
M.R.C.P. LOND.,
ASSISTANT PHYSICIAN, LONDON HOSPITAL; PHYSICIAN, VICTORIA HOSPITAL FOR CHILDREN, CHELSEA.

AN apology is hardly needed for describing a series of cases of pyloric obstruction in infants. Although many cases have been described in late years by clinicians of experience there is as yet no settled plan of treatment. Further, certain clinicians whose views on the subject seemed to be established now show signs of modifying their views and even of changing them entirely. It is evident, then, that the subject has not yet ceased to be a suitable one for discussion and exchange of opinions. I do not propose to discuss the pathology and etiology of this condition but merely to describe briefly a series of cases in the hope that the description will justify certain inferences and add to our general knowledge of the subject.

It is said that the condition is more common in males, that the symptoms commonly begin in the second month, and that it is characterised by forcible vomiting, visible gastric peristalsis, wasting, constipation, and the presence of a palpable pyloric tumour. With regard to the last sign I am rather sceptical. I have felt a hard cylindrical tumour in certain cases, especially during gastric peristalsis. But it is impossible to palpate deeply in many cases, and in some cases of wasting with a lax abdominal wall I have felt a similar tumour. I regard the palpability of the pylorus rather as a sign of wasting than of pyloric hypertrophy.

CASE 1.—The patient was a female, aged 18 weeks. There were present vomiting, wasting, constipation for four weeks, and peristalsis was seen occasionally. The patient was treated by gastric lavage twice a day and later on alternate days. She lost weight for two weeks and then improved in all ways, gaining 7 oz. in 24 days. All was going well when the child, who came of an epileptic stock, had a series of fits and died in three hours.

At the post-mortem examination the capacity of the stomach was found to be enlarged. The stomach wall was hypertrophied and the pyloric aperture was narrowed so that nothing larger than a probe could be passed easily. Mucous membrane in linear folds. Muscle of pylorus greatly thickened so as to form a hard resistant ring occluding the pylorus.

In the above case the age of this patient was a remarkable feature. Another point of interest was that although the pylorus was almost occluded post mortem it had been possible for the patient to put on weight.

CASE 2.—A male, aged 4 weeks. Vomiting, wasting; constipation coming on gradually for 10 days; visible peristalsis. Treated by gastric lavage and pancreatised milk. Gained 3 oz. in four days. Then diarrhœa set in and the patient became collapsed and died rapidly.

The post-mortem examination revealed hypertrophy of the pyloric muscle, causing narrowing of the lumen.

CASE 3.—A female, aged 9 months. Sudden illness with vomiting. Brought to hospital next day in a collapsed state. Very violent gastric peristalsis visible. Death in a few hours.

Post mortem a hard piece of meat was found plugging up the pylorus.

This case is quoted to show that visible gastric peristalsis can occur very soon after the pylorus is obstructed.

CASE 4.—A male, aged 8 weeks. Had been ailing for three weeks with obstinate vomiting. He had improved and had gained weight for a time under small doses of tincture of opium and feeding with dry feeds of virol. The stomach had not been washed out. The patient began to "go down hill" and vomiting set in again. He was treated with gastric lavage and pancreatised milk. He improved for 24 hours as regarded vomiting, but it became worse again, causing sudden collapse and death two days after he was first seen.

CASE 5.—A male, aged 5 weeks. Vomiting, constipation, wasting, peristalsis. Treated with lavage and pancreatised milk. Improved steadily from the start. In two weeks increasing feeds of citrated milk were used to substitute pancreatised milk. Though visible peristalsis continued the improvement was maintained and the patient left the hospital in seven weeks. When seen some months later he was in good health.

CASE 6.—A female, aged 10 weeks. Similar condition to Case 5. In hospital seven weeks. Treatment and progress similar to Case 5. When seen later was in good health.

CASE 7.—A female, aged 14 weeks. Wasting, forcible vomiting, constipation, very violent peristalsis. Treated by gastric lavage and pancreatised milk to which albulactin was added later. Lost weight for the first four weeks and then gained steadily. The weights in October were 7 lb. 7 oz., 6 lb. 14 oz., 7 lb. 1 oz., and 7 lb. 2 oz.; in November 7 lb. 1 oz., 7 lb. 3 oz., 7 lb. 7 oz., and 7 lb. 13 oz.; in December 8 lb. 1 oz., 8 lb. 4 oz., 8 lb. 8 oz., and 8 lb. 14 oz.; in January 9 lb. 10 oz., 10 lb. 4 oz., and 11 lb. 6 oz. Lavage was gradually omitted; citrated milk feeds were gradually used to replace pancreatised milk. When seen at the age of 2 years the patient was a healthy, strong, well-developed child, never having any gastric trouble.

CASE 8.—A male, aged 11 weeks. Very violent peristalsis in which three distinct waves could be seen; forcible vomiting, wasting, constipation. Treatment similar to Case 7. Progress slow at first, and then rapid gain in weight. In hospital 11 weeks. The patient was in good health when seen six months later.

CASE 9.—A female, aged 6 weeks. Wasting, constipation, forcible vomiting; peristalsis occasionally seen. Treatment on the usual lines. Progress was at first in the wrong direction, 1 lb. in weight being lost in the first month. After the first month there was a steady gain in weight. Weights: July, 8 lb. 8 oz.; August, 7 lb. 9 oz.; September, 8 lb. 7 oz.; October, 8 lb. 13 oz.; November, 10 lb. 1 oz.; December, 11 lb. 1 oz.; January, 12 lb. 5 oz.; February, 14 lb. 10 oz. Reported two years later to be in good health.

CASE 10.—A female, aged 16 days. Still under observation at the age of 5 months. This patient has been the most troublesome of all. Her weight on admission was 5 lb., and at the age of 5 months 8 lb. 5 oz. For five weeks weight was gradually lost until the condition seemed desperate. Then an ounce was gained and a gradual gain took place with periods of slight loss or stationary weight. The child is now in a satisfactory condition and is developing steadily.

This patient is the youngest of the series. At first peristalsis was seen occasionally; it is still seen after feeding.

In examining the above series it will be seen that one case (Case 3) is not a case of pyloric stenosis but of obstruction of the pylorus by a foreign body.

Of the remaining nine cases the following points may be noted:—

Sex.—There are 5 females and 4 males.

Age.—The males are younger than the females, except in one instance. The earliest age was in a female, 16 days; the greatest age was in a female, 18 weeks; but the average age is younger in the male.

Result.—Of the 3 fatal cases, 2 were males and 1 female. One patient died from fits, another from diarrhœa, and a third was in a very bad way and died within 48 hours of first being seen. Of the 6 who recovered 5 have become perfectly normal children and have been kept under observation since. In some cases recovery was straightforward and rapid; in others the struggle for improvement was desperate, and only after many vicissitudes did the patient come out of it alive. The remaining one is Case 10, who is still under observation.

Physical signs.—1. Vomiting. This is one of the most characteristic features of the condition. It is sudden and forceful. The stomach contents are shot a long way, sometimes even out of the cot. 2. Wasting and constipation require no comment. 3. Peristalsis is a variable sign. It is sometimes very definite as in Cases 7 and 8. In other cases —e.g., Cases 1 and 9—it is only seen occasionally. In Case 1 there is no doubt about the pyloric stenosis as there was a post-mortem examination. It is perhaps unjustifiable to draw conclusions from a limited number of cases; but in these few cases it was noteworthy that if peristalsis was violent the treatment was much easier and progress steadier. In the cases in which peristalsis was not an outstanding feature the treatment was much more troublesome and the progress more uncertain. Case 3 proves that visible peristalsis may occur without there being any hypertrophy of the stomach. Peristalsis should be regarded as a sign of obstruction rather than of hypertrophy. Peristalsis of the stomach is frequently seen in young babies who have vomiting, colic, and constipation. I have records of many such cases seen in out-patients and treated satisfactorily by castor oil and eliminating milk curd from the diet for a few days. These cases may be regarded as instances of "pyloric spasm." Possibly if they were untreated a hypertrophic stenosis might follow. Who knows? 4. I have already expressed my opinion on the palpable pyloric tumours.

Treatment.—The medical treatment of these cases requires the greatest care and skill on the part of the nurse. I wish to record my great indebtedness to Sister Louise, of the Victoria Hospital, to whose devotion the six successfully treated patients owe their lives. Of those who died, Case 2 died when she was on her holiday, Cases 3 and 4 were not under her care, and Case 1 died from fits while gaining weight satisfactorily; so that Sister Louise can claim that she has had 6 cases, all successful. The medical treatment consists in (1) keeping the patient warm; (2) washing out the stomach; and (3) feeding with predigested milk.

1. Keeping the patient warm seems easy, but with a very minute infant it is not so easy as it seems. I have found that the most satisfactory way is to put the baby, all but the head, in a hot-air bath that can easily be rigged up in an ordinary cot. A fracture cradle is taken and draped with pieces of blanket. Inside it are hung an electric lamp and a thermometer. The air inside the cradle is thus warmed and kept warm.

2. Washing out the stomach requires little description. It can be done with the baby sitting up on the nurse's knee or lying down on one side. It may have to be done several times a day, but usually twice a day is often enough. After a week once a day is enough as a rule. My practice is to use warm tap-water, which is a moderately good solvent of mucus. Occasionally I use a solution of bicarbonate of soda or citrate of potash. I have given up the constant use of these solutions as a routine method, as I have found in several cases that, after a few days, there was a tendency to diarrhœa. If the child is too feeble to stand regular washings out warm water can be given to drink. A vomit will probably follow which may bring up some mucus.

3. Predigested milk will be for a long time the sole diet. I prefer liquor pancreaticus to other preparations for the purpose of digesting milk. The milk should at first be given a teaspoonful at a time every half hour. When this amount is tolerated the interval and quantity may be increased. When the patient is beginning to thrive I have found virol and albulactin useful as additional foods.

Drugs are occasionally useful. When there are much colicky writhing and abdominal tenderness I give tinct. opii ♏ ¼ or chlorodyne ♏ i. three times a day for two or three days. I have tried belladonna, but found it useless in this disease. The bowels have to be kept open. An occasional dose of castor oil followed by grey powder will often be sufficient. Petroleum emulsion is also useful. Phenolphthalein is perhaps the most satisfactory drug to use regularly.

The most vital question of all remains: Is this condition to be treated by the physician or the surgeon? Doubtless there is much to be said on both sides, but all will agree that the disease is one of the most "tricky" that we know and is of a very "special" character. Whether we advocate medicine or surgery, it will be admitted that much depends on who the physician is, more on who the surgeon is, and still more on who the nurse is. If surgical treatment is employed it does not mean that it is a substitute for medical treatment. The after-treatment of the infant who has been operated on is just as "ticklish" as the medical treatment throughout. At best surgical treatment shortens the duration of the illness, and as time is valuable there is much to be said for operation. On the other hand, risks are great in surgical treatment and results vary in a most startling fashion with different surgeons. I trust that I may say without giving offence that there are comparatively few surgeons in whose hands operative treatment is not attended by very grave risks. Personally, I am trying to keep an open mind with regard to treatment and am endeavouring to find some definite indication which will direct the line of treatment.

In some of the cases in this series the patients have been sent to me by surgeons as they were too ill to stand an operation. In some the condition seemed desperate, but they eventually recovered. I think then that in the very bad cases medical treatment only can be recommended. When such patients begin to improve and are strong enough to stand an operation a surgeon might give his opinion once more. But it seems too like tempting providence to interfere with a treatment that is satisfactory. If the condition remains stationary for long or begins to decline after an initial improvement a surgeon should certainly be called in. If a child is seen in the early days of the disease and the diagnosis is definite I should recommend surgical treatment provided that the child has plenty of strength. But unfortunately such children do not come under observation in the early days, a remark especially true of hospital practice.

In conclusion, I would summarise thus: 1. Some cases can only be treated by the physician. 2. Some cases would be better treated by the surgeon; but whether they are or not, medical treatment will be necessary. 3. Whether the treatment is medical or surgical, neither will be effective without the care of a specially skilled nurse.

Queen Anne-street, W.

PROGNOSIS IN CANCER OF THE TONGUE.

BY WILFRED TROTTER, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO UNIVERSITY COLLEGE HOSPITAL.

I. *Prognosis as to Cure.*

ONE of the greatest embarrassments of the surgeon in dealing with cancer of the tongue is the difficulty of making reasonably sure in any given case as to whether a satisfactory result of treatment is or is not to be expected. It commonly happens that in a case which the surgeon is inclined to regard as favourable the tumour proves to be desperately malignant and recurs after an extensive excision, and it occasionally happens, though unfortunately less often, that a very serious looking case proves to be unexpectedly favourable. Mistakes in prognosis of the most painful kind are thus, if the surgeon is betrayed into giving an opinion, extremely likely to occur. Moreover, this capriciousness in the behaviour of cancer of the tongue is apt to discourage systematic and thorough methods of operation, for the surgeon is tempted to believe at times that his most careful extirpations are as likely to be followed by recurrence as the less scientific procedures of an earlier time. Most surgeons of any considerable experience in the disease must, for example, occasionally have had to do with a patient who, after the primary growth has been successfully removed, has refused to submit to the gland dissection in spite of all warnings, and yet has remained permanently free from further trouble. Such experiences cannot fail to be disturbing, especially if one remembers at the same time the cases in which extensive gland operations have totally failed in their purpose.

Not only, however, are the results of clinical work inconsistent with one another, but they are also, at any rate ostensibly, irreconcilable with pathological findings. It has been conclusively shown by Cheatle in his histological studies that in many cases of cancer of the tongue, not necessarily of an advanced type, cancer cells can be demonstrated throughout the tongue muscles as far as their origin from the hyoid bone. And yet it has been demonstrated equally conclusively in actual practice that many operations which fall far short of removing the tongue muscles down to the hyoid are perfectly satisfactory in preventing local recurrence. It is true that in some such cases no doubt a true local recurrence in the muscles close to the hyoid bone has been mistaken for a glandular recurrence. With all due allowance for this fallacy, however, it remains the fact that those who have practised an operation which makes no pretence to attain complete removal of the muscles (Whitehead, Butlin) have been able to show results which are, to say the least, not grossly inferior to those of surgeons who regularly use a much more extensive procedure.

It seems to me that these difficulties of prognosis are very well worthy of discussion. It cannot be supposed that cancer of the tongue is inherently capricious in a way that must remain incapable of analysis, or that between two apparently similar cases, one of which defies an extensive operation while the other yields to a comparatively trivial one, there is no real and discernible difference of type. Apart from its theoretical interest the question is of considerable practical importance, for there can be no doubt that one of the reasons why the public still to a considerable extent refuses to submit to really early treatment of cancer of the tongue is the inability of the surgeon to give in *any case, however early*, a reasonably certain assurance that a cure will be attained.

The "Superficial" Stage of Epithelioma.

The majority of epitheliomata pass through a period in their early stages—lasting, perhaps, for about three months on an average—when the growth is strictly localised and unaccompanied by any infiltration of the tissues beyond its clearly palpable margin. The tumour then feels like a hard disc superficially embedded in the tongue and projecting above its surface. The amount of projection is considerable in proportion to the bulk which lies below the general surface. The tumour feels hard, and owing to the absence of surrounding infiltration the contrast between its consistence and that of the adjacent tongue is very abrupt. The size of the tumour may be considerable, and yet these characters be retained. Large tumours of this type always project markedly in a cauliflower-like mass.

A growth in this superficial period if removed with a margin of palpably healthy tissue ½ to ¾ inch wide is practically certain not to recur. If therefore the characters just given can be clearly made out and an adequate operation is done the surgeon is justified in giving a very definitely favourable prognosis as to local recurrence. I have never seen such a case in which after a suitable operation local recurrence took place.

It is most important to recognise that the fact that a given tumour is in the superficial period of its growth has no bearing whatever on the question whether glandular infection has occurred or not. It should be accepted as an incontestable principle in the surgery of epithelioma that as soon as the diagnosis of the primary tumour can be made the presence of glandular infection must be assumed. Nevertheless, when glandular enlargement is palpably present it shows varieties corresponding in prognosis with the superficial (early) and diffuse (late) types of the primary growth. Some surgeons are inclined always to give a very grave prognosis when enlarged glands are present in cancer of the tongue. My own experience by no means confirms this attitude. Provided the glands show clinical characters similar to those of the superficial type of growth—that is to say, are hard and well defined, and free from any trace of inflammatory manifestations—their presence if a thorough operation be done can scarcely be regarded as making the prognosis worse than if none could be felt. Even the number of the glands to be felt is comparatively unimportant and is certainly of much less significance than the signs presented by the individual glands.

It seems certain that the maintenance of the superficial stage of the growth is the result of the energetic and to a certain extent successful resistance of the tissues of the body to invasion by the cancer. We may suppose that outlying cancer cells penetrating the tissues are rapidly destroyed, and that it is only the compact mass of the whole growth which can maintain itself and advance successfully. Such a state of affairs will produce the well-defined frontier between cancer and surrounding tissue which is characteristic of the condition clinically and will explain why removal of the tumour with a comparatively limited margin is successful in eradicating the disease. Similarly is to be explained the clinical fact that the greater the proportion of the bulk of a tumour which projects above the surrounding surface the less its local malignancy tends to be—in other words, that the papillary and cauliflower growths are less malignant than the ulcerous and nodular forms. From the point of view of the nourishment of a cancer it is clear that infiltration of the tissues is the most advantageous mode of growth. If, however, this is prevented by a high resistance of the body tissues, a large part of the growth of the tumour must result in external projection—a less advantageous method of progress, since it is sooner or later limited by failure in blood-supply, as is shown by the well-known tendency of all largely projecting tumours to slough.

The "Diffuse" Stage of Epithelioma.

Sooner or later in their course all epitheliomata undergo a change in their mode of progress which is manifested clinically by signs which, although not always conspicuous, are usually perceptible to careful observation. The most important sign is a loss of distinctness in the outline of the tumour. The boundary between the cancer and the surrounding tissue is no longer the hard, sharp line of the superficial stage, but is obscured by an induration which fades gradually into the tongue. This diffuseness in outline may be very evident or only very slightly marked, but the detection of it is always extremely important. At the same time there may be a little œdema about the tumour and sometimes increased pain and tenderness, while the tumour itself tends to appear less hard.

I have elsewhere referred to this change as the onset of submucous invasion. It bears no necessary relation to the size of the tumour, so that a comparatively small tumour may show it quite clearly, but it is of the gravest significance in prognosis. The type of operation which is perfectly adequate during the superficial stage is now no longer of the least use, and whatever operation is done a favourable prognosis can no longer be given with any degree of confidence. It is of great importance to recognise that quite small tumours may be of this type, and that certain cases occur in which the tumour is of this type from the first. The classical three varieties of early cancer of the tongue—the papillary, the ulcerous, and the nodular—include one, the nodular, which shows typically this precocious submucous invasion. Epitheliomata of the posterior third of the tongue and of the sublingual fold are apt to be of the same type, and with the nodular form of cancer of the anterior part constitute a group of infamous reputation as regards malignancy.

A similar stage in the development of the disease in the glands also occurs. As with the primary growth all cases show it sooner or later, and some cases show it from the first appearance of gland involvement. The glands are then ill-defined and rather soft, so that they are not always very distinctly palpable. A gland of this type is the worst possible manifestation that can be found in an early case; a single one, perhaps not an inch in diameter, is of much graver significance than a dozen of the well-defined hard variety. Later such glands are apt to be accompanied by œdema and diffuse brawny induration, possibly with redness of the skin. Such a case is very likely to be mistaken for an inflammatory lesion by the inexperienced and treated accordingly.

It is probable that the diffuse variety of the disease in the primary growth is always associated with the same form in the glands; it is certain that they usually go together.

The precocious development of early diffuse invasion seems particularly liable to occur in strong, healthy, well-nourished subjects of florid appearance and comparatively early age.

Experience shows that operations undertaken for epithelioma in which the diffuse stage has begun are particularly apt to be followed by early, rapidly growing, and diffuse recurrence even when the type of the disease has been recognised, the growth is quite small, and the excision has been very extensive. It cannot be doubted, therefore, that in these cases there is a diffusion of cancer cells throughout the tissues around the growth to a distance far beyond the palpable induration and extending into regions which do not display the least abnormality to the naked eye.

When, therefore, operations are undertaken for this type of the disease there is no chance of cure unless an extremely drastic procedure is adopted. A radical extirpation of the tongue muscles down to and perhaps including the great cornu and body of the hyoid bone at the least on the affected side is essential, and there is a good deal to be said for total extirpation of the tongue and hyoid bone. The ordinary forms of excision of the tongue without total removal of the affected muscles including their origin, is a mere mutilation without any sufficient prospect of cure to justify it.

The pathological conclusion to be drawn from the clinical behaviour of diffuse epithelioma seems to be that in such cases the resistance of the body to invasion by the cancer has broken down, with the result that outlying cancer cells readily invade the tissues and survive and thrive at great distances from the mass of the tumour. The frontier between the cancer and the body is no longer defended and therefore ceases to be sharply marked. Invading outposts of cancer cells are no longer cut off as soon as they attempt to cross the boundary, but readily penetrate beyond it, extorting with no effort abundant nourishment from the passive and unresisting territory in which they find themselves. Such are doubtless the cases in which Cheatle found cancer cells living and active scattered throughout the muscles of the tongue at great distances from the primary growth. As has been already pointed out, the primary growth may yet be comparatively small when this collapse of the body resistance occurs. Indeed, it is probable that the so-called nodular form of cancer of the tongue owes its peculiarities to attacking a subject in whom the normal resistance is absent from the first. These cases of nodular cancer present appearances fully consistent with this view. The tumour grows from the mucous membrane and is fixed to it, but practically its whole bulk lies within the substance of the tongue. Over the summit of the mass the mucous membrane may be a little elevated and always allows the whitish colour of the tumour to show through. But the surface may be quite intact, and ulceration may still be absent at a time when operative cure of the disease is almost hopeless.

The fact that gland involvement in epithelioma does not as such greatly worsen the prognosis if the glands are of the hard, well-defined type suggests that gland involvement is not a stage in the progress of the disease due to a diminution of body resistance, but that directly an epithelioma begins it is able to affect the glands. Doubtless the growth of the cancer within the glands is energetically resisted and many early colonies of cancer there are exterminated, but the path to the glands is open from the first. When recurrence takes place after dissection for glands of the ill-defined type it occurs not, as a rule, in other glands beyond the region which has been dealt with, but in the tissues surrounding the area of operation. The suggestion of this fact is that when a gland becomes ill-defined the change means that the tissues surrounding the gland have lost their resistance to invasion and are being attacked successfully by the glandular mass of cancer in exactly the same way as the tissues about the primary growth are being attacked; but apparently it does not mean that the resistance of the lymphoid tissue itself has broken down. That this latter resistance remains high for a long period and even to the end is shown by the successful results of gland dissections (for gland involvement of the well-defined type), although the enlarged glands are numerous or possibly even bilateral, and by the fact that patients dying from gland recurrence rarely show invasion of the mediastinum. It is not, then, the progress of epithelioma along the lymphatics which constitutes the great difficulty in dealing with gland involvement, but rather the tendency of the surrounding tissues to lose their resistance to invasion by the glandular mass.

That, however, a general loss of lymphoid resistance to cancer can and does occasionally occur is well supported by clinical evidence. In my own experience it is chiefly an event of very long standing and chronic cases in which a series of incomplete gland dissections has been done. After perhaps several years, during which the disease has apparently been kept in check by the removal of individual glands as they become enlarged, there is suddenly an outburst of glandular enlargement over a wide area, and possibly even the whole body. Even then the individual glands may show no great tendency to invade surrounding parts, so that the condition seems to be one of collapse of lymphoid resistance without collapse of general tissue resistance. The occurrence is comparatively rare, but is a striking warning against trifling with even the most benign-looking gland involvement by partial operations.

The considerations it is desired to draw attention to may be repeated here in summary form. An epithelioma grows by local invasion of the tissues and by invasion of the lymphatic system. In early cases of the ordinary type growth in both these directions is energetically resisted. Successful treatment depends on both these antagonistic forces —the tissue resistance and the lymphatic resistance —being strong. As a rule the lymphatic resistance remains high throughout and no generalised lymphatic invasion occurs. In all cases, however, and in some quite early, the tissue resistance breaks down, and then diffuse invasion occurs both from the primary growth and the glands. The nodular form of cancer of the tongue is an admirable example of very early loss of tissue resistance.

It is maintained that the occurrence of this collapse of tissue resistance can be recognised clinically, and that prognosis depends on whether it has occurred or not. Operations undertaken before this event need be of only moderate severity, and yield very satisfactory results. Operations undertaken after this event must be very extensive and often seriously mutilating, and yield even then much less satisfactory results.

The liability to gland involvement is present from the first and cannot be regarded as constituting a definite stage in the disease. It follows, therefore, that a gland operation must be undertaken in every case, and that involvement of glands, provided there is no evidence of diffuse invasion of the tissues around them, is not of very serious prognostic significance.

II. *Prognosis as to Operative Dangers.*

The only serious dangers of even the most extensive operations are those due to sepsis, and I shall therefore make no attempt to deal with any others. Sepsis takes two forms—infection of the lungs and infection of the wound. The former if at all severe leads to abscess formation and gangrene with an almost necessarily fatal result; the latter may lead to acute septicæmia or to a cellulitis extending diffusely in the neck with the risk of mediastinitis and of secondary hæmorrhage.

In operations for growths of moderate size on the anterior part of the tongue these complications are not usually the cause of any serious trouble. When, however, the floor of the mouth, the posterior (pharyngeal) part of the tongue, or the pharyngeal wall is implicated, the danger is considerable. It is sometimes forgotten that the surgery of the mouth and pharynx has benefited from the introduction of antiseptic surgery less than the surgery of any other part, and that the surgeon working there has to elaborate a system of precautions against sepsis, which will include many features quite strange to the routine of ordinary aseptic technique.

Lung Complications.

Pneumonia or gangrene of the lung, for the terms are practically synonymous in this connexion, is unquestionably always due to inhalation of septic material into the lungs. No doubt blood sucked into the trachea frequently acts as a vehicle for such septic material, but the importance of it in itself has probably been exaggerated. Pneumonia not very uncommonly will occur after a preliminary gland operation if this has been extensive and prolonged, and there has been a large foul growth present in the mouth. During such an operation there is almost always some difficulty in maintaining a satisfactory airway; this obstruction greatly increases the amount of aspiration at the upper laryngeal opening, and so encourages the inhalation of septic matter from the growth. In operations on the primary growth the risk is, of course, very much greater, because to the factor of increased aspiration through partial obstruction is added disturbance of the growth which encourages the dislodgement of septic material from its surface.

The best precaution, therefore, against lung infection is the abolition of the possibility of aspiration. Some surgeons effect this by intratracheal administration of the anæsthetic. To my mind the risk of conveying septic material into the trachea during the introduction of the tube is a serious objection, and in my own practice I invariably use tracheotomy or laryngotomy—the latter usually for mouth operations as distinct from pharyngeal—followed by plugging of the pharynx. The little operation is quickly done and free from any risk of its own. In addition to its advantages in the control of pulmonary infection it has another which to my mind is almost as important. By rendering the breathing easy and effortless throughout it greatly diminishes the exhaustion of the patient. There can be little doubt that a long period of stormy, difficult respiration, chequered by intervals of struggling and coughing, is a very serious strain on the patient's strength. Such an experience is far from uncommon if it is attempted to do any of the more elaborate operations without means which allow of uniform quiet anæsthesia. For these reasons I regard the preliminary laryngotomy or tracheotomy as the one essential precaution in diminishing the danger of lung infections after operations for cancer of the tongue.

Local Infection of the Wound.

There can be little doubt that in ordinary cases of cancer of the tongue in which the growth is in the superficial stage local infection is a matter which concerns the patient's comfort and rapidity of convalescence more than it does his life. In such cases it can usually be prevented by adequate suture of the wound. It may seem to some, therefore, that in laying as much stress on it as I propose to do I am making too much of an inconsiderable matter. When we come, however, to operations for growths with deeply ulcerated surfaces and seated far back the dangers of local infection of the wound are admittedly very real. It is, of course, in operations of any extent upon the pharynx that this particular group of risks reaches its acme, and it is here, therefore, that the pathological conditions concerned and the prevention of them can be studied under most instructive conditions.

To a superficial examination the occurrence of grave conditions of local sepsis after operations has the same freakish character as has the attainment of cure of the disease. Similar seeming cases pursue a widely different course; one, perhaps, in which sepsis was not seriously feared develops extensive cellulitis, while another which seemed less favourable heals without causing serious anxiety.

A considerable experience of the surgery of the mouth and pharynx was necessary before even it became clear that the one thing that determines the occurrence or otherwise of grave local sepsis is the condition of the mouth. Operative technique, no doubt, can do much in limiting and controlling infection, but of itself it can give no complete safety. If the contents of the mouth have their ordinary virulent infectivity the most elaborate precautions and the most careful plastic protection of the wound may be brought to nought by uncontrollable sloughing inflammations. Ordinary cleansing of the mouth, scaling of teeth, removal of stumps, use of antiseptic washes with brush and dental silk make very little difference to the risk when carried out as a preliminary to operation. Moreover, patients with clean mouths and who are habitually careful with them are little if at all less liable to serious complications than those who are careless and whose mouths are obviously septic. I confess that this destruction of a time-honoured belief was a surprise to me, but it is also an admirable instance of the fact that the local pathology of the upper alimentary tract has many striking peculiarities.

On the other hand, *edentulous patients give rise to no serious anxiety on the score of sepsis.* I have never met with any exception to this rule, and I regard it as of the utmost value in forming a prognosis as to any proposed operation. It may be remarked also that in edentulous patients ulceration of the growth is much less and a much slower process than in those who still have teeth.

Supposing these were all the facts the solution of the problem would be very simple. It would merely be necessary to extract all the teeth present and then proceed to do the operation when the gums were healed. This is doubtless a drastic proposition, but I am quite sure that very few patients over 50, if the case were fairly put to them, would refuse their consent, especially if we could thereby guarantee a great reduction in the danger of the operation. I have put this proposal into practice, and while I have never had the least difficulty in obtaining the patient's consent to get rid of his remaining teeth, of which he is usually by now heartily tired, I have been a good deal disappointed by getting a great deal more sepsis than I expected.

It is clear, therefore, that there is a difference between the infectivity of the mouth of those who have recently lost their teeth and those who have been edentulous for a considerable time, so that we may conclude that some time must elapse between the extraction of the teeth and the operation. I am inclined to put this period in the neighbourhood of a month at the least. So great is the advantage to be expected that I am now willing to allow the growth to progress for that time, knowing that one's freedom in dealing with it and the diminution in danger quite compensate for the dangers of the delay. Moreover, I am inclined to doubt if the lapse of a month will ever convert a curable growth into an incurable one. It seems, therefore, that the intractable sloughing inflammations caused by contact with the oral secretions are due to an organism which is the invariable companion of the teeth, that its presence is independent of whether the teeth or gums are obviously infected or not, and that following upon removal of the teeth it does not disappear from the mouth for some time after the gums have healed.

The practical consequences of these considerations are obvious enough. In the first place, a favourable prognosis as to the danger of the operation can always be given in the case of edentulous patients. Secondly, a powerful argument is furnished in favour of the opinion that as soon as people come to the age when the teeth begin rapidly to give more and more trouble—say about 50, which is also about the age at which malignant disease of the upper alimentary tract is at its commonest—total extraction is a much more reasonable procedure than the most skilful efforts of plastic dental surgery. From the point of view solely of one who has to deal with a number of cases of cancer of the mouth and pharynx one would say deliberately that if a man develops cancer in this region the possession of natural teeth is a misfortune almost as great as the malignant disease itself. Thirdly, it becomes a duty when a suspicion of the development of malignant disease occurs to lose no time in dealing radically with the teeth so as to allow as long an interval as possible for the mouth to recover before the operation. As I have already said, most patients at the age of 50 are glad enough to part with their remaining teeth if this course is firmly and reasonably advised. At this time of life the teeth are almost certainly becoming increasingly troublesome, and efforts to preserve them increasingly difficult and unsatisfactory. Greatly as one must admire the achievements of modern conservative dentistry one cannot help feeling that when the teeth can obviously last but very few years, these hard-won triumphs might very well be reserved for patients of a younger age in whom vanity is a stronger or at any rate a more respectable passion.

Harley-street, W.

TUBERCULOSIS OFFICER FOR ROSS-SHIRE.—At a meeting of the Ross-shire county council held on Oct. 15th it was unanimously decided to appoint a tuberculosis officer for the county at a salary of £500 per annum. It was also decided by a large majority to defer preparing a scheme for a central hospital for the treatment of tuberculosis until the new officer had had time to investigate and form an opinion as to which would be the better, a central hospital or small district hospitals.

UNIVERSITY OF ABERDEEN: OPENING OF WINTER SESSION.—The winter session in the faculties of medicine and science in the University of Aberdeen opened on Oct. 16th, when Professor Theodore Shennan delivered the introductory lecture from the chair of pathology and Professor F. Soddy delivered the introductory lecture from the chair of chemistry. Dr. John Parlane Kinloch also gave his first lecture in public health. Principal George Adam Smith was present at all the lectures and introduced the new teachers. Before welcoming Professor Shennan the Principal paid a tribute of respect and affection to his predecessor, Professor G. Dean, and in introducing Professor Soddy the Principal alluded to the ability and devotion with which Professor F. R. Japp had filled the chair of chemistry, to which Professor Soddy was now appointed, for 24 years, earning for himself in his retirement the cordial gratitude and esteem of the University. With regard to the new lectureship in public health, the Principal in welcoming Dr. Kinloch said that this lectureship was long overdue, and to-day they were congratulating themselves that it had at last been realised. On behalf of Professor Matthew Hay he expressed regret at his unavoidable absence.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

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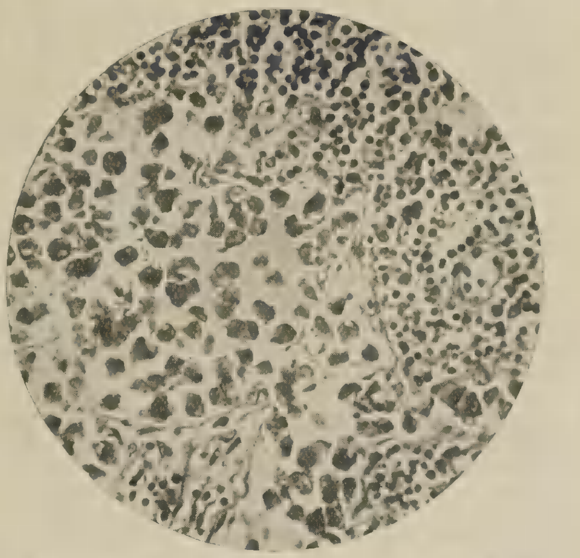
A CASE OF MALIGNANT DISEASE OF THE LUNG.

By HUGH N. TAYLOR, M.A. CANTAB., M.D. DUB., F.R.C.S. EDIN.,
SURGEON, EBBW VALE HOSPITAL, MONMOUTHSHIRE.

ON July 3rd I was asked to see in consultation a man, aged 38 years, who was said to be suffering from a pleuritic effusion, probably of a purulent nature, subsequent to an attack of pneumonia. I found an emaciated patient with the left chest full of fluid. He had a slight hacking cough occasionally, and there was a history of some six weeks' "illness," but no definite account of any pneumonia. The patient was said to have several times expectorated "blood." There was no rise in temperature, and the pulse, which was feeble, was some 84 to the minute. But the man was evidently very ill, and I urged that he should come into the hospital, to which he was admitted the next day. When I saw him he had considerable dyspnœa but no pain. On aspiration—the first and only one—nearly six pints of fluid, deeply stained with blood, were withdrawn, but the dyspnœa was in no way relieved; in fact, the patient said that his "breathing was worse." There were some faint breath sounds after the tapping, but nothing very definite could be made out; no glandular enlargements could be felt. On two occasions he expectorated a small "currant jelly" mass. I formed the opinion that the case was probably one of malignant disease of the lung. The patient rapidly became weaker and died on July 12th, a week after admission.



Reproduction of a photo-micrograph showing endothelial cells invading lymphoid tissue. (× 300 diameters.)

As only a very limited post-mortem examination was allowed I could do no more than remove the left lung, which I found infiltrated at the root with a soft reddish growth; a mass of the same material was present on the surface of the lung in the submammary region, where it had become adherent to the chest wall. I sent the lung to the Clinical Research Society and received the following report:—

> This lung shows infiltration by a malignant growth, especially at the root. The growth is composed of large cells enclosed in an alveolated manner in a very scanty stroma. Its actual nature is not quite certain, but it is either a soft carcinoma or an endothelioma. If it is a primary growth it is probably the latter.

The illustration shows endotheliomatous material infiltrating lymphoid tissue. It is said that serous effusions are more usual in the nodular forms—i.e., in those of a scirrhous or epitheliomatous type, while the soft carcinoma or the endothelioma is evidenced by signs of consolidation with subsequent breaking down. In this case, however, there was nothing of the hard type to be felt either in the growth itself or in any of the glandular tissue at the root, while the effusion was very copious and deeply stained with blood.

Ebbw Vale.

NOTE ON LIMITATION OF THE AFTER-PAIN OF QUININE INJECTIONS.

By A. G. Peter, M.B., Ch.B. Aberd.

A serious practical drawback to the intramuscular injection of quinine is the undoubted after-pain which a large number of people suffer at the injection site, whether it be given in the lumbar or the gluteal region. Patients, where they have any choice, naturally prefer a practitioner who has not the reputation of advocating this line of treatment, and so greatly do some people dread the after-pain of quinine injections that they will resort to every kind of subterfuge to avoid them.

Last year one of my patients, whom owing to a very severe attack of malaria I had to inject frequently during the acute stage, wrote to me three months afterwards to say that although he then felt extremely well he was still conscious of tenderness at the sites of injection, and this though the utmost care was observed in securing strict surgical cleanliness at the time of injection, and no visible inflammatory reaction could be noted afterwards.

With a view to limiting if not abolishing this after-pain, I tried the addition of various local anæsthetics—e.g., eucaine B and novocaine—to the amount of quinine bihydrochloride given, usually between 10 and 20 grains, but with indifferent success. I then tried the addition of the recently introduced quinine and urea hydrochloride tablets, and was gratified to find a conspicuous absence of any after-pain when this drug was used. By trial the smallest amount required to ensure comfort afterwards was found to be half a grain of quinine and urea hydrochloride compound.

I have now had several severe cases of malaria where it has been necessary to give repeated hypodermics of quinine, and so far I have had no complaints from patients of after-pain at the injection site, although one of them was a man who was very sensitive to it, as I had proved by previous injection of quinine alone. I accordingly would suggest a wider trial of this combination, as patients will much more readily submit to injection, if they can be assured that they will have nothing further to pain them than the initial stab of the needle.

The points which call for note in this matter are: 1. A half-grain tablet of quinine and urea hydrochloride appears to be sufficient to remove the after-pain of quinine injections. My supply was obtained from Messrs. Parke, Davis, and Co., but I understand they can be obtained from any of the well-known chemists. 2. One tablet is added to the amount of quinine to be given, about 2 c.c. of water are then added, and the boiled solution received into a sterile 2 c.c. syringe for injection. 3. The solution is equally efficacious when boiled, but in too concentrated solution is apt to block the needle if not given at once.

Prestea, British West Africa.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

Exhibition of Cases and Specimens.—Making Intestinal Fistula after Operation upon the Abdomen.

A meeting of this section was held on Oct. 8th, Dr. W. S. A. Griffith being in the chair.

Dr. H. Russell Andrews recorded a case of Severe Bleeding after the Menopause due to Rupture of a Vein in the Endometrium. The patient was aged 49 years; her periods ceased in 1910; there was a severe flooding in May, 1911. On admission the patient was blanched and a tumour was found reaching to above the umbilicus; this was proved at operation to be a degenerating fibroid. The tumour did not bulge into the cavity of the uterus, but the latter was enlarged and two dilated veins were seen on the surface of the endometrium; one of these had an opening visible to the naked eye. When the uterus was squeezed blood oozed out of this opening. The opening was large enough to admit a piece of thick silkworm gut.

Dr. Arthur E. Giles and Dr. Cuthbert Lockyer showed a case of Pregnancy Occurring within the Ovary. The patient was aged 32 years. She consulted Dr. Giles for sterility. Six months previously a menstrual period had been missed, after which the monthly flow was resumed [illegible] usual. On examination Dr. Giles found a rounded swelling of the size of a duck's egg to the right of the uterus; this was diagnosed as an ectopic gestation. At the operation the tumour was found to belong to the right ovary. The corresponding tube and mesosalpinx were normal. With the aid of the epidiascope Dr. Lockyer demonstrated: (1) that the pregnancy sac was completely surrounded by a capsule of ovarian stroma; (2) the presence of a large amniotic sac in which no fœtus had been discovered; (3) large chorionic villi with their mesoblast undergoing mucoid degeneration; (4) calcareous deposits in the blood clot around the villi; (5) decidual reaction in the connective tissue of the medullary portion of the ovary; and (6) decidual reaction in the cortical substance of the ovary. No lutein lamina could be found investing the gestation sac. The case was one of true ovarian pregnancy in which the embryo had died and the amniotic sac had become dilated by hydramnios. There were no visible blood-vessels in the enlarged villi, but their degeneration and the presence of calcareous deposits on the blood clot suggested that the death of the ovum must have occurred some long time before the operation.

Dr. Giles showed slides prepared from a case of Chorion Epithelioma removed from a patient aged 50 years, accompanied by a report on the histological findings by Dr. Dudgeon and Mr. Gordon Ley.—Remarks were made by Dr. W. Blair Bell, Dr. Herbert R. Spencer, and Mr. Gordon Ley.

Mr. J. D. Malcolm showed a Fibromyoma Uteri complicated by diffuse simple papilloma of the interior of the uterus. Those members who examined the sections were of the unanimous opinion that the "papilloma" was [illegible] adenocarcinoma.

Mr. Donald W. Roy communicated a case of Puerperal Eclampsia, fatal, from rupture of a large subcapsular hæmatoma of the liver into the peritoneal cavity.

Mr. Malcolm read a paper on cases in which an Intestinal Fistula was made with a View to Facilitate

Recovery from Operation upon the Abdomen. He discussed the condition sometimes arising after an abdominal section in which the surgeon believed that if the patient's bowels would move recovery would follow, but if the bowels would not move the patient would die. The symptoms were usually attributed to a paralysis or a paresis of the intestine, and this, in turn, was commonly believed to be due to a septic peritonitis. Mr. Malcolm expressed the opinion that in many of these cases the cause of trouble was not a septic peritonitis, but that the symptoms were due in part to a feebleness of peristaltic force, in part to some more or less definite obstruction of the intestine, and that the conditions might be correctly described as one of acute intestinal stasis. He recalled the fact that when opium was given in full doses after every abdominal section most of the cases did well, but if no gases escaped from the anus the patient always died not later than the fifth day and a slight spreading peritonitis was found after death. If in one of these cases a second operation was performed in the hope of finding an obstruction early on the fourth day or sooner, but when the symptoms were well developed, there was never any sign of spreading peritonitis in a typical case. Moreover, sometimes, if no second operation was undertaken, a patient immensely distended and apparently moribund would, without apparent cause, begin to pass gases from the rectum and all the symptoms would be completely and rapidly resolved. It was argued that the peritonitis found after death, when death occurred, could not be the cause of the symptoms, and that it was a consequence of the mode of death. The effect of modern treatment by substituting stimulation of the bowel and rational feeding for continuous administration of opium and starvation was pointed out, and records of cases were given in support of these views. In three cases patients seemed certain to die from vomiting and distension respectively on the tenth, fifth, and fifth days after an abdominal section. A Paul's tube was therefore inserted into the small intestine in two cases and into the cæcum in the third, and immediate relief of all symptoms followed. In the first case the patient died 16 months after the operation from general tuberculous disease with the fistula still open. In the other two cases the fistula was closed by operation and recovery was complete. In these three cases the bowel below the fistula resumed its functions without further surgical treatment. In a fourth case under similar circumstances the second operation failed and the patient died. There was no post-mortem examination, but there was a focus of infection from which peritonitis might have started. Mr. Malcolm assisted at two other operations for the relief of distension five days after the primary operation and these proved fatal, one being certainly a case of septic peritonitis. In both these cases attempts to release adhesions were made. In Mr. Malcolm's fourth case there was intense pain over the site of a colon anastomosis and great distension on the third day after the operation when complete relief was given by inserting a Paul's tube into the cæcum. The fistula closed spontaneously when an ileosigmoidostomy was performed 16 days later. In two other cases a fistula was made in the course of an operation—once in the ileum, once in the cæcum—to keep the lower bowel quiet, with good results, the fistula being closed later by operation. The importance of not making a fistula unnecessarily was insisted upon, but the fact that this treatment would occasionally save a life that would otherwise be lost was shown by the records given. The making of a fistula for the relief of distension was not likely to be successful in a case of septic peritonitis. If an early diagnosis could be made in a strong patient an immediate release of adhesions might give the most satisfactory results, but after the third day, if the patient was weak and if there were many adhesions, an extensive operation would almost certainly prove fatal, whereas a simple formation of a fistula might bring about a cure.—The paper was discussed by Dr. W. W. H. TATE, Dr. HENRY BRIGGS, Dr. C. HUBERT ROBERTS, Dr. GILES, and Dr. MARY SCHARLIEB.

VACCINATION IN BRISTOL.—From July 1st to Dec. 31st, 1913, 4467 births were registered; of this number 1093 were successfully vaccinated and 763 had certificates of conscientious objections. Of the remainder many had removed to "places unknown," and a considerable number were "unaccounted for."

Reviews and Notices of Books.

The Practice of Surgery.

By RUSSELL J. HOWARD, M.S. Lond., F.R.C.S. Eng., Surgeon, Poplar Hospital; Assistant Surgeon, London Hospital; and Joint Lecturer on Surgery and Teacher of Operative Surgery, London Hospital Medical College. With 8 coloured plates and 523 illustrations in the text. London: Edward Arnold. 1914. Pp. 1227. Price 21*s.* net.

THERE are many text-books on surgery, and new examples make frequent appearance, many of which possess some feature which commends them to the student. It is not at all easy to write a perfect text-book of surgery for the student, for while it must contain all that the student needs for his examination, it is especially difficult to deal with the latest additions to surgery. The writer must be able to discriminate between the new points which are important and are likely to be permanent and those which are merely of temporary interest. Still more he has to take care that those personal opinions which every surgeon holds and which have not been widely accepted should not be allowed to obtrude themselves too prominently.

In spite of these great difficulties several excellent text-books of surgery have appeared within recent years, and after a careful examination we do not hesitate to include amongst them the work which lies before us. In the first place it is clear; the author has taken great care to make the descriptions such as may be easily understood even by junior students; this is of great importance, for it is far better for the student to have an explanation which he does not need than for him to fail to find an explanation which he requires. In the second place the work is adequately illustrated, also a matter of great importance, for many things are much more easily learnt by the eye than by a written description. The illustrations have been chosen judiciously; many have been taken from the rich stores of the museum of the London Hospital Medical College, and there are numerous photographs of patients which should be very informing to the student.

Altogether we have much enjoyed reading this book, and consider that it should take a high place among the surgical text-books used by students. Here and there are places in which some judicious alterations might be made for the second edition when the time comes for it to appear. For example, in the account of the operative treatment of inguinal hernia the descriptions of the various operations which are performed are far too brief to be understood by the average student, though they will be perfectly clear to the surgeon.

Serology of Nervous and Mental Diseases.

By D. M. KAPLAN, M.D., Director of Clinical and Research Laboratories of the Neurological Institute, New York City, &c. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 346. Price 15*s.* net.

WE own to regarding with some suspicion each new work that appears on the subject of serum treatment and diagnosis, but we can say at once that the book before us well justifies its existence. It is evidently written by one who is an expert in the subject with which he deals, and who therefore has words of counsel to give which are deserving of attention.

The work is arranged in four parts. The first deals with the technique of lumbar puncture, with the composition of the cerebro-spinal fluid in health and disease, and with the method of performing the complement-fixation test for syphilis associated with the name of Wassermann. The second part is devoted to the serology of diseases other than syphilis, and the third to nervous and mental affections due to that protean disorder. Finally, Part IV. describes in detail the administration of salvarsan and the effects which may follow its employment.

The author's attitude in relation to the subject dealt with is much to be commended. He points out that errors may occur in the practice of even the most careful and experienced worker, and that the laboratory specialist must be on his guard against making assertions arising out of his tests as to clinical conditions when all he should report is the actual result obtained. He should be content to report that the Wassermann reaction is positive, not that the patient is suffering from syphilis, and so forth. "Surtout point de zèle" in short. He holds that the direction of error in this test is towards an undue number of positive reactions. On the other hand, syphilis is not cured by one dose of salvarsan as was formerly hoped. Dr. Kaplan notes as remarkable the frequency of a positive Wassermann reaction in cases of sclerodermia and of Raynaud's disease as suggesting a possible connexion between these affections and syphilis.

The book is well written and interesting. It has a sufficient number of cuts and plates, without being over illustrated. One small lapse in diction we feel bound to protest against, and that is the use of "most" for "almost" ("most everyone," p. 51). We have noted the same vulgarism in other books of late, and hope that it is not going to creep into the language either of this country or of the United States.

Development and Anatomy of the Nasal Accessory Sinuses in Man.

By WARREN B. DAVIS, M.D., Corinna Borden Keen Research Fellow of Jefferson Medical College. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 172. Price 15*s.* net.

THE fact that much has been published and still more has been said about the adult anatomy, the diseases, and more particularly the surgical treatment of the diseases of the accessory sinuses of the nose is evidence of the differences in the views expressed. These differences in some measure may have arisen from insufficient attention being paid to the embryology and development of the sinuses. The publication of the research work by Dr. Davis into the "Development and Anatomy of the Nasal Accessory Sinuses in Man" is therefore a valuable addition to the literature of the subject. The book is a record of observations based on 290 lateral nasal walls, showing the various stages and types of development of the accessory sinus areas from the sixtieth day of fœtal life to advanced maturity.

The difficulty in conducting a research of this kind is that of obtaining the necessary material. The bodies of children between the ages of 2 and 16 years are seldom obtainable in the dissecting rooms of European institutions as well as in America. It was necessary, therefore, in order to complete such a series to develop a technique by which the accessory sinus areas could be removed *en masse* at the time of post-mortem examinations, and still allow reconstruction of the face without marked disfigurement. In one of the opening chapters the methods used in obtaining and preparing the specimens are described.

A feature of the book are the 57 separate plates. The illustrations are natural size, unless otherwise stated in the legends, and are from drawings very accurately made by Miss Dorothy Peters, who has evidently given the most careful attention to detail. The plates are well printed, and the legends whilst succinct are fully descriptive. No pains have been spared in the production of a monograph which will be of value to the expert as well as to the beginner desirous of placing his knowledge on a sure foundation.

Scrofulosis.

By Professor G. CORNET. Translated by J. E. BULLOCK, M.D. Brux., Assistant Medical Officer, the Eversfield Chest Hospital, St. Leonards-on-Sea. London: John Bale, Sons, and Danielsson, Limited. 1914. Pp. 515. Price 15*s.*

THE terms "scrofulosis" and "scrofula" have given rise to a considerable amount of confusion as regards their exact meaning. In the Hippocratic period χοίραδες was applied to the swollen glands in the neck which, forming a continuous outline with the lower jaw and shoulders, produce a resemblance to the full contour of the pig's neck. At the present time some observers consider scrofulosis to be a slowly progressing localised tuberculosis, others are of opinion that the condition is due to a certain disposition or dyscrasia, which in its course often presents tuberculous complications. In recent times changes in other organs have been more definitely taken into consideration, such as the skin, mucous membranes, and joints.

In the volume now before us an interesting and comprehensive survey of the whole subject is given, which, although obscure in some details, nevertheless presents the nature, diagnosis, and treatment of scrofulosis in a scientific manner. Dr. Cornet considers that in the sense now accepted scrofulosis comprises a complex of symptoms almost entirely confined to childhood and early youth. Such, he says, affect the skin and the various mucous membranes: lupus, scrofuloderma, lichen, tuberculides, eczema, impetigo, chronic blepharitis, and phlyctenules; others are middle-ear disease, chronic catarrh of the air passages, rhinitis, pharyngitis, bronchitis, hyperplasia of the tonsils, catarrh of the alimentary canals, and lastly, certain affections of the bones and joints. This list is a satisfactory one, and accurately cites the changes likely to be encountered. These processes are, of course, not of themselves specific of scrofulosis, but are distinguished from other non-scrofulous phenomena of a similar kind by their persistency, frequent recurrence, and multiplicity. Two forms of scrofulosis are distinguished: (1) the tuberculous form due to the tubercle bacillus; (2) a non-tuberculous form caused by other bacteria. We believe bacteriologists will agree with Dr. Cornet that these organisms are mostly the staphylococcus (aureus and albus) or the streptococcus. To these he adds (3) a combination of both processes, the tuberculous and the pyogenous, the mixed form of scrofulosis, the effects of which differ according as the tubercle bacillus or other germs come into play first or simultaneously.

The relationship of scrofulosis to tubercle bacilli of the bovine type is discussed at length, and Dr. Cornet's well-known observations on the modes of infection by the human, bovine, and avian types are again chronicled. He repeats the opinion that bovine bacilli are almost avirulent for adults and are only virulent for children to a modified degree, very seldom producing a pronounced tuberculosis. The symptomatology of the condition is well described, and the measures to be adopted in regard to prophylaxis are duly set forth. The principles of the therapeutics of scrofulosis are clearly laid down and many valuable suggestions are made. Amongst internal remedies iodine takes first place. Cod-liver oil is described as an auxiliary of nutrition rather than as a medicine.

The whole volume is full of interest, and demonstrates the large amount of labour involved in its production. A word of praise must be awarded to Dr. Bullock for the manner in which he has translated the work.

L'Appareil Thymo-Thyroïdien: Thyroïdes, Parathyroïdes, Thymus. Anatomie, Physiologie, Pathologie, Déductions Thérapeutiques.

Par L. LAUNOY, D.Sc., Assistant de Physiologie à l'Institut Pasteur. Paris: J. B. Baillière et Fils. 1914. Pp. 405. Price 14 francs.

THIS work deals with what the author calls the "thymo-thyroid apparatus," comprising three distinct, but anatomically closely related, organs. A careful description of the embryology, anatomy, physiology, and pathology of each organ is given. The descriptions will be of interest both to physiologists and comparative anatomists, because they deal with the great variety of form, position, and general relations of these organs in all classes of vertebrates. Besides collating and giving a résumé of the work of other observers the author gives the result of his own experiments. References are given to the newer literature, and in the text itself there are 50 illustrations.

Embryologically, all three organs have the same origin from the mesoderm, being derived from the epithelium of the branchial clefts; the thymus and parathyroid from the epithelium of the branchial pouches, which are, of course, saccular dilatations of the branchial region of the digestive tube. The author regards the evidence as sufficient to group all three organs under the title "thymo-thyroid apparatus." The parathyroids are absolutely essential for life, because their removal causes death sooner or later. So, also, is the thymus—at least, in young animals. The thyroids do not seem to be so immediately necessary to life. As regards the relation to tetany, the thymus stands next to the parathyroid, and the same appears to be true as regards the psychical factor. The effects of removal of the thymus—idiocy—should be compared with those that obtain after removal of the thyroids. These two organs seem to govern the metabolism of the calcium salts in the body. The loss of calcium after their removal is the necessary corollary of the acid intoxication or acidosis consecutive to the excision of each of these organs.

As to the thyro-parathyroid apparatus, the one cannot functionally replace the other. After their excision the thyroids are responsible for the myxœdema, the cutaneous trophic disturbances, the dementia and other well-known symptoms, while the parathyroids are responsible for the tetany. Removal of the thyroid causes a special cachexia, compatible with long life. It does not appear to be demonstrated that exophthalmic goitre is due to hyperthyroidism. At any rate, experimental hyperthyroidisation causes phenomena which are difficult to reconcile with those of Graves's disease. Removal of the thyroid is followed by hypertrophy of the hypophysis. Nor is it demonstrated that the iodised protein substances in the thyroid owe their specific action to the iodine they contain. All mammals develop tetany after removal of the parathyroids, and their complete removal is rapidly fatal. Birds—especially young specimens—are less sensitive than mammals to removal of the thyro-parathyroid couple. The tetany may supervene suddenly, as in the dog, cat, and rabbit, or only after many days—e.g., 30 days in the monkey. It may be more or less permanent if part of the parathyroid remain.

The thymus, though a transitory organ, never completely disappears. It is an organ very susceptible to all causes of infection. The X rays cause a permanent involution. Its removal causes a "cachexia thymopriva," slow but fatal. Is it an organ related to the formation of nucleins? It appears to be correlated functionally with the genital organs. In 80 per cent. of the cases of Graves's disease there has been found a persistent large thymus.

Such are the arguments and conclusions of this most useful monograph.

The Psychopathology of Everyday Life.

By Professor Dr. SIGMUND FREUD, LL.D. Authorised English edition, with Introduction, by A. A. BRILL, Ph.B., M.D., Chief of Clinic of Psychiatry, Columbia University, &c. London: T. Fisher Unwin. 1914. Pp. 342. Price 12*s.* 6*d.* net.

THE English translation of Professor Freud's book "Zur Psychopathologie des Alltagslebens" is made from the fourth German edition, which was reviewed in THE LANCET of Dec. 20th, 1913, p. 1776. It is not therefore necessary to go over the ground again, but reference may be made to one or two additional matters suggested by a re-reading of the book in its English garb.

The assertion is made by the author that the forgetting of names is conditioned, in general, by two considerations: either the name itself touches something unpleasant, or it is brought into connexion with other associations which are influenced by such effects. Various elaborate and complex instances are supplied to exemplify these assertions. It is curious, however, that the influence of interest is ignored or minimised, and also that the most obvious explanation of name-forgetting, as in the case, say, of a physician who sees hundreds of out-patients weekly, is not so much as mentioned. For a whole series of seemingly accidental awkward movements, again, we are assured that the correct explanation is that the movements are in reality skilful and designed. If we knock something off a table, we do it by design, never by accident. Professor Freud's words are: "I actually believe that we must accept this explanation." If we give a beggar or a cabman a half sovereign instead of a sixpence, "the solution of such mishandling is simple: it is an act of sacrifice designed to mollify fate, to avert evil, and so on." In place of the term "chance actions," Professor Freud would substitute "symptomatic actions," for they are said to give expression to something which the actor himself does not suspect in them.

For all these statements, and others even more far-fetched, we are assured that psycho-analysis furnishes the justification. In a word, the whole structure is based on the reliability of psycho-analysis as a method of investigation, and it stands or falls with it. Apart, therefore, from the inherent improbability of much that is herein offered as the sole possible explanation of trifling events, apart from the author's refusal to accept the plain and the obvious, and his penchant for the recondite and the subtle, he has staked his faith entirely on the trustworthiness of psycho-analysis as a means of discovering the secrets hidden, as he believes, in the recesses of the mind. The objections which have been formulated to the genuineness of the interpretations put on the data thus obtained apply therefore to many of the "conclusions" here advanced with all the assurance of dogma.

The Diagnosis and Treatment of Digestive Diseases: A Practical Treatise for Students and Practitioners.

By GEORGE M. NILES, M.D., Professor of Clinical Medicine, Atlanta Medical College, Georgia. London: Henry Kimpton. Pp. 597. Price 21*s.* net.

THE growth of specialisation has produced in the United States the "professor of gastro-enterology," and this volume is an admirable compendium of the latest knowledge and the most recent technique in the field.

The resources at our command for diagnosis in chronic diseases of the digestive tract, especially of malignant disease of the stomach, have increased enormously in the last few years, and the author's account of them, notably of the use of Roentgen rays after bismuth meals, and of rectal injection with sulphate of barium, shows not only a complete grasp of technique, but great judgment in estimation of difficulties and limitations. The account of recent X ray work is one of the best sections of the book, reviewing carefully the deductions in diagnosis drawn by Holzknecht, Jolasse, and others. It requires great experience to interpret properly the appearance of visceral skiagrams, even of the best technical quality, and many an expert would gain knowledge from these pages. Considerable space is rightly assigned to the manipulation of the stomach tube. Simple as this instrument is, there is frequently a prejudice against its use, due to faulty manipulation. Dr. Niles employs the Friedlieb method of irrigation with a simple funnel. The author's procedure for duodenal feeding is that of Max Einhorn, who originally developed it.

All the chapters on treatment appear to be full, judicious, and well arranged. The author is throughout so careful to acknowledge obligation to other workers in this field and to allow them proper credit, that we are surprised that a reference bibliography has not been appended. The style of writing is simple, precise, and yet readable. So excellent is the whole that it is permissible to criticise trifles. There is not, and there never could be, such a word as to "ptose." "Ptosis" (a falling) is a good Greek word, but it is derived from πίπτω, and the proper derivation would be to "pipt," which would repel most seekers after new technical words. Dr. Niles perhaps dismisses intestinal antiseptics too abruptly, apparently because he considers it impossible to render the intestinal tract "aseptic." But it is possible to lessen the degree of protein putrefaction, even in the large intestine, and many well-known drugs will aid its prevention.

The work is truly a practical treatise suitable not only for students and practitioners, but even for well-informed specialists.

LIBRARY TABLE.

A Surgical Handbook for the Use of Students, Practitioners, House Surgeons, and Dressers. By FRANCIS M. CAIRD, M.B. Edin., F.R.C.S. Edin., and CHARLES W. CATHCART, M.B. Edin., F.R.C.S. Eng. and Edin. Sixteenth edition, revised and enlarged. With 208 illustrations. London: Charles Griffin and Co., Limited. 1914. Pp. 364. Price 8*s.* 6*d.* net. —On many occasions we have expressed our appreciation of earlier editions of this valuable work, and we are glad to see this the latest issue. An examination of the book shows that many alterations have been made in it since the appearance of the fifteenth edition, especially in the sections dealing with anæsthesia, with the treatment of fractures, and with spinal caries. Many of the older diagrams have been withdrawn and have been replaced by new, so that evidently much has been done to bring the book up to date. Here and there are statements which may be open to discussion, but we bear willing testimony to the high standard which has been reached by this deservedly popular handbook.

Industrial Training, with Special Reference to the Conditions Prevailing in London. By N. B. DEARLE, M.A., Fellow of All Souls, Oxford; Shaw Research Student of the London School of Economics and Political Science, 1907–09. London: P. S. King and Co. 1914. Pp. 605. Price 10*s.* 6*d.* net.—Mr. Dearle has presented in a readable form the facts connected with industrial training, principally with regard to London, accompanied by suggestions for remedying defects to which he calls attention and general constructive criticism. Some day, no doubt in less troubled times than these, his work will be found useful by those interested in educational and social reform. Those who study it now will find in the conditions he describes striking evidence of the social mischief due to lack of organised and disciplined effort, and to the unwillingness of employers and employed to acquiesce in or to demand educational organisation for their own benefit. Mr. Dearle's work will be found interesting by those who wish for information as to conditions as they are in this country. It does not, however, pretend to describe in detail with a view to our instruction industrial training as exists elsewhere—in America, for example, or in that highly organised and industrially trained country with which we are now at war—and it is rather through comparison and the desire to emulate the achievements of others that we must improve ourselves eventually.

On the Effects of Volcanic Action in the Production of Epidemic Diseases in the Animal and in the Vegetable Creation, and in the Production of Hurricanes and Abnormal Atmospherical Vicissitudes. By H. J. JOHNSTON-LAVIS, M.D., D.Ch., M.R.C.S. Eng., L.S.A. Lond., F.G.S. London: John Bale, Sons, and Danielsson, Limited. 1914. Pp. 67. Price 3*s.* net.—This essay gained the Parkin prize of £100 awarded by the Royal College of Physicians of Edinburgh. It discusses the physics and chemistry of volcanic eruption and the physical effects of eruptions on human beings and animals. Pages 24–49 are taken up with a "small selection" of citations of different authors on the supposed relationship of eruptions to epidemic diseases of man, animals, and plants, and these are followed by a description of the physical effects of eruptions on plant life and the influence of eruptions in the production of hurricanes and abnormal atmospheric vicissitudes. The author concludes from the aseptic and antiseptic character of all volcanic materials, "with the exception of mud from the sea bottom, from crater lakes, or from the organic contaminated slope of the mountain," that there is no *direct* relationship between volcanic eruptions and disease in man or animals. He recognises and considers, however, the following indirect ways in which epidemic diseases may be related to volcanic outbursts: 1. Erosive effects of irritant and depressing fumes on the ocular, respiratory, and to some extent digestive, mucous membrane may lower resistance. 2. Watercourses may be disturbed or contaminated through landslips, and proper drainage may be interfered with. 3. The moral depression from fear may reduce resistance, as also may the imperfect nourishment consequent on the environment and conditions.

JOURNALS AND MAGAZINES.

Quarterly Journal of Microscopical Science. Edited by Sir RAY LANKESTER, K.C.B., with the coöperation of Professor SYDNEY J. HICKSON, Professor E. A. MINCHIN, Professor GILBERT C. BOURNE, and Professor J. GRAHAM KERR. Vol. LX., Part 3, September, 1914. London: J. and A. Churchill. Pp. 150. Price 10*s.*—The first article in the September number consists of Observations on the Gametogenesis of Grantia Compressa, by Mr. Arthur Dendy, professor of zoology in King's College, London. His attention began to be directed towards the problem of the origin of the germ-cells in calcareous sponges while writing a memoir on the common British species, Grantia compressa. In the course of this work it became evident that although the ova of this sponge were easily recognisable in the maternal tissues in various stages of growth, and also embryos in various stages of development, no one had ever been able to find the spermatozoa. In April, 1912, Professor Dendy accordingly paid a visit to the laboratory of the Marine Biological Association at Plymouth, and although unable to find spermatozoa in living specimens, he preserved material which on subsequent investigation furnished the clue to the solution of the problem. He found that the sponge was hermaphrodite, producing both male and female germ-cells simultaneously, but that the spermatozoa were produced in comparatively small numbers, the minute sperm-morulæ being scattered here and there, enclosed in spermatocysts, between the collared cells of the chamber walls, and also occurring free in the flagellate chambers. The spermatogonia in these sperm-morulæ were extremely minute, and nothing was ascertained with regard to their mode of division. Apparently they were sometimes transferred as sperm-morulæ to the inhalant canals of the same or of another individual. With regard to the process of oögenesis Professor Dendy has been able to give a fairly complete account of a number of very interesting stages. One of the most remarkable phenomena observed during his investigations was the nutrition of the growing oöcyte by means of phagocytic nurse cells.—In the second article Miss Monica Taylor discusses the chromosome complex of culex pipiens. For the purpose of this research she obtained very numerous pupæ of this gnat and placed them in small ponds which were covered over with large cages made of mosquito-netting, so that the resulting imagines could be observed. Her general conclusions are as follows: (1) the somatic number of chromosomes is three, both in the male and female of culex pipiens; (2) the number of chromosomes in the spermatogonia as well as in the primary and secondary spermatocytes and spermatids is three; (3) the spermatogonial cells are not characterised by a synizesis stage, which latter serves to mark off the spermatogonial from the secondary spermatocyte stage; (4) the nuclear membrane persists throughout mitosis; (5) the synizesis stage represents an inactive phase of the nucleus in spermatogenesis; and (6) a synizesis stage occurs in somatic nuclei.

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

BOVININE.

(THE BOVININE CO., NEW YORK. LONDON AGENCY: W. EDWARDS AND SON, 157, QUEEN VICTORIA-STREET, LONDON, E.C.)

ACCORDING to our analysis there can be little doubt of the nutritive and tonic value of this preparation. Above all, it contains a directly assimilable albumin which is coagulated on heating. We found that the amount of coagulum yielded was no less than 14·85 per cent. This yielded on incineration mineral matter rich in iron. In the original fluid the iron occurs in the form of an organic compound. The spectroscope shows the distinctive bands given by hæmoglobin. The total solid matters amounted to 22·02 per cent. and the mineral matter to 1·44 per cent. The preparation keeps well, and to the preservatives used there can be no objection. They amount to a small proportion of alcohol and glycerine. In cases where a rapid nutritive and tonic are required bovinine seems well suited. Having regard to its special use for invalid purposes the price of it is consistent with its value.

DRAKENSTEIN WINE.

(E. WESTMACOTT AND CO., 368, STRAND, LONDON, W.C.)

This is a white wine produced from a Rhein stock in Cape Colony. It is a great improvement on the wines produced there some years ago. It is elegant, light, and agreeable to the palate, while possessing a distinctive flavour. For all practical purposes it is free from sugar, the actual amount present according to our analysis being 0·116 per cent. The total solid matters only amounted to 2·09 per cent. and the mineral salts to 0·16 per cent. It is free from excess of acid, the volatile acidity amounting only to 0·072 per cent., and the fixed acidity reckoned as tartaric acid to 0·525 per cent. The alcohol amounted to 13·43 per cent. by volume. The wine is well suited to dietetic purposes.

PLASMON OAT COCOA.

(INTERNATIONAL PLASMON, LIMITED, 66A, FARRINGDON-STREET, LONDON, E.C.)

This preparation shows a careful incorporation of the constituents indicated, and when prepared according to instructions gives a very palatable and highly nutritious food. In particular it is reinforced with the tissue-building material of milk. According to our analysis it contains just upon 20 per cent. of milk protein. In addition, there is 15·60 per cent. of fat present derived chiefly from cocoa. The moisture amounted to 6·50 per cent. and the mineral matters to 4·80 per cent. In these last there was an abundance of phosphates. It is a wholesome, sustaining food.

(1) BANANINA; AND (2) BARLEY FLOUR.

(BANANA BREAD FLOUR FOOD, LIMITED, CEREAL-COURT, 16, BRUNSWICK-STREET, LIVERPOOL.)

1. Bananina is an interesting product obtained by the drying and milling of banana fruit. It has the characteristic smell of the banana and is a fine flour which readily dissolves under the influence of the salivary and other ferments. The ripe banana contains an appreciable amount of sugar owing to the action of its own enzyme on the starch. Banana flour contains a small proportion of sugar inasmuch as it is prepared before the

fruit is fully ripe. We found present 2·40 per cent. of sugar. In addition to its energy value as a food banana flour supplies also some tissue-building material, since, according to our analysis, bananina contains 5·29 per cent. of protein (0·84 nitrogen). 2. We have examined also a specimen of barley flour which under the microscope presented the characteristic appearance of the genuine product. Barley shows less protein than occurs in wheat flour, but it contains more fat and it is richer in mineral constituents. The flour we examined was a genuine natural product, and there was no evidence of chemical treatment. In particular it yielded a yellow colouring matter to petrol, which shows that it has not been bleached.

VOCALZONE PREPARATIONS.

(MEGGESON AND CO., LIMITED, 14 AND 15, MILES-LANE, LONDON, E.C.)

These preparations attracted some attention at the medical exhibition held in Aberdeen in connexion with the last meeting of the British Medical Association. Their composition is based on the choice of well-known, harmless, and agreeable antiseptics put together in a menstruum which is attractive in application. Three preparations were submitted to us. The first was a clear green fluid, which is mentioned favourably in the treatment of coryza, nasal catarrh, and other secretory troubles in the nasal passages. It is a soothing, unirritating, cleansing fluid which can be used either as a douche or coarse spray. It has also been employed in diseases of the pharynx and larynx. Vocalzone gargle is composed of suitable antiseptics coupled with an astringent which makes it effective as a gargle. Lastly, vocalzone pastilles are designed to soothe irritable conditions of the throat and bronchial tubes. They are demulcent and sedative.

MAPLE SUGAR AND SYRUP.

(THE CANADIAN MAPLE PRODUCTS COMPANY, LIMITED, 1, ENDELL-STREET, LONDON, W.C.)

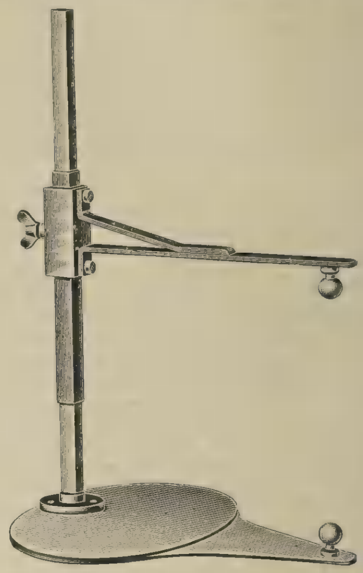
Maple sugar is chemically identical with cane or beet sugar. It has, however, a characteristic and to many persons an attractive flavour due to aromatic substances occurring in the bark of the tree. Maple sugar also is said to be slightly laxative. Apart from sweetness it has a quite interesting flavour, which is soon appreciated by those who have had no previous experience of it. Our analysis of the sugar was as follows: Moisture, 4·00 per cent.; mineral matter, 0·60 per cent.; invert sugar, 10·00 per cent.; and sucrose, 85·40 per cent. We also examined the syrup, which has to an even more marked degree the peculiar flavour of the sugar itself. We find that it is very susceptible to decomposition, for after a few days the syrup began to effervesce very rapidly due to alcoholic fermentation.

New Inventions.

AN AID TO THE RADIOGRAPHY OF THE PITUITARY FOSSA.

IN order to compare the size and appearance of the pituitary fossa in a series of radiograms it is obvious that the true lateral position of the skull must be chosen in each case. The axis of the tube must lie parallel to the plate and its target immediately beneath the fossa. This position of the head may be obtained: (*a*) by means of two metallic rings, one surrounding each external auditory meatus[1]; (*b*) by inserting a small coin into each of these apertures[2]; or (*c*) by placing a lead shot over the skin on each side of the head at the site of the sella turcica,[3] and subsequently manipulating the tube and the head until the image of one circle falls within the other, or until the two images of the coins and shot coincide. When shot are employed the target remains in the same position for the radiogram, but in the former devices (*a* and *b*) it is moved one inch towards the orbit and one inch towards the vertex of the skull.

As the time required for a good radiogram of the fossa may be as long as 30 seconds there is ample opportunity, especially in children, for slight movement of the head, the occurrence of which would prejudice the result. The simple instrument shown in the accompanying illustration (the model of which was constructed for me by Mr. Ilsley, electrician to the X ray and electrical departments of St. Bartholomew's Hospital) fixes and enables one to place the head in the desired position. It consists of a stand carrying a metallic bar, at the free end of which is fixed a leaden earpiece resembling that of a binaural stethoscope. Opposite to it, and fixed to the stand, is a second knob. The bar is movable upon the support and may be clamped at the proper height. The ear-knobs lie at the same distance from the pillar and in the same vertical line. Each fits into an auditory meatus. When inserted there is little or no tendency for the patient to alter the position. A piece of lead is then placed at the junction of the middle and outer third of a line running from the outer canthus of the eye to the external meatus, and the target is moved until it strikes the metal. The lead being removed, the diaphragm is opened and a radiogram taken. The determination of the true lateral position by means of radioscopy alone is uncertain and therefore inadequate for exact measurement.



The clip may be used when the tube is above and the plate beneath the head. Also it may be employed for stereoscopic radiograms of the fossa and orbit, for obtaining accurate lateral views of the face and the sinuses, &c. When the couch has a canvas top it may be preferable to lay upon it a rectangular piece of three-ply wood of suitable width for the support of the head. It may be provided with a spirit-level and with feet to raise the head an inch or more, taking care that the target remains the same distance in all cases. The head-clip is manufactured and listed by Mr. Leslie Miller, 66, Hatton-garden, London, E.C. It is obvious that the head may be fixed in a true antero-posterior position by the employment of the same principle and by the suitable modification of the instrument.

WALKER OVEREND, M.A., M.D. Oxon.,
Chief Assistant in the X Ray Department of St. Bartholomew's Hospital; Honorary Radiologist to the East Sussex Hospital, Hastings.

St. Leonards-on-Sea.

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[1] W. Hampson, THE LANCET, March 7th, 1914, p. 714.

[2] N. S. Finzi, Royal Society of Medicine, Feb. 24th, 1914.

[3] S. Gilbert Scott, Royal Society of Medicine, Feb. 24th, 1914

THE LANCET.

LONDON: SATURDAY, OCTOBER 24, 1914.

The Public Health Service and the National Crisis.

UNDER this title Dr. HERBERT JONES on Friday last, Oct. 16th, delivered the presidential address of the Society of Medical Officers of Health, and in spirited words indicated the part that has been played, that is now being played, and that will have to be played in the future by our public health service in securing for the British Empire the success that is necessary for its existence. For the magnitude of the struggle in which we are involved, and its deep significance both in the cause of justice and in the interests of national welfare, are now seen by all. With legitimate complacency Dr. HERBERT JONES pointed to the material upon which the country is now drawing to fill the ranks of the army as distinctly better than that upon which reliance had to be placed 20 years ago. At that time 40 per cent. of recruits were rejected on medical inspection; ten years later the percentage of rejections was reduced to 30; and now the discarded amount to but little over 20 per cent. of the total applicants, a good standard being maintained among the 700,000 young men who have recently joined the colours. A great share in the improved physique of the country is owing to our public health service, and this is our reason for returning so soon to a subject which we dealt with fully last week.

A large part of Dr. HERBERT JONES'S address was naturally occupied in explaining the relations now existent between the Territorial Army and the sanitary organisation of the country, and these relations show that we have learnt the lesson of the South African war, when more men were put out of action by preventable disease than by the bullets of our gallant friends who were then the enemy. At that time it was considered unnecessary to employ on the spot medical officers who had special knowledge of sanitary affairs. Upon the creation of the Territorial Force opportunity was taken to include in the new body provision for a sanitary service, and in 1907 Sir ALFRED KEOGH, then and now again, Director-General of the Army Medical Department, suggested that the medical officers of health of the country should combine in a voluntary organisation having for its object the preventive care of the masses of men who in the event of mobilisation would be required to prepare for the defence of the country. From this movement sprang the *à la suite* sanitary service, a well-conceived organisation, whose establishment, however, amounted to only 120 officers, and these had limited spheres of action. The want of flexibility to which the terms of the Regulations might have led has been remedied since, and we now know that wherever troops are stationed they will obtain the good offices of the medical officer of health of the locality. The Army Council has also indicated to the generals in command that the medical officer of health is in the best position to give information respecting both the existence of infectious diseases in any district and the drainage and water-supply to be found. To quote Dr. HERBERT JONES:—

> "With regard to the billeting of troops the medical officer of health is now to be communicated with before troops march into his district, with a view to obtaining his expert advice and coöperation in arranging the billets under the best sanitary conditions available. In the case of towns a telegram will be sent in advance to the medical officer of health appointing a time and place of meeting with the billeting officers, who are sent in advance to arrange for the housing of troops. In districts outside towns a telegram in similar terms will be sent to the medical officer of health of the county in which the troops are to be billeted. At Territorial Force Headquarters the medical officer of health will be consulted before men are furnished with billets, and where camps are formed and maintained he will be consulted and his visits encouraged."

That the medical officers of health of the country will rise to this great occasion and assist our military authorities with zeal and judgment no one who knows the thoroughness which has for so long marked their administrative work can for a moment doubt. But the duties which they have been instructed to take up, and which they have assumed with pride and alacrity, will call for great delicacy as well as complete thoroughness in execution. There are still among our military authorities those who are ready to suspect in non-military assistance undesirable interference in the higher spheres of the art of war, and such authorities will need to be approached circumspectly, but with full recognition that all parts of our fighting machine are equally alive to the paramount importance of securing the health of the troops.

The War and the Dislocation of Private Practice.

WE have already referred to the fact that the depletion of the staffs of the general hospitals of the country has all over the kingdom been very marked owing to the mobilisation of the Territorial Forces, and it is now recognised that the dislocation of private practice which has followed upon the same cause is becoming grave; indeed, if sickness should break out in many districts of the country the outcome would be truly serious. The Executive Committee of the General Medical Council has throughout paid anxious attention to this matter, and we are able to add that the

War Office is in full sympathy with the Council in any effort to prevent needless removal of a large body of medical men from their regular duties. We all recognise that at this moment military exigencies must come first: the General Medical Council feels this as clearly as every medical man. The machinery of the War Office must not be hampered in the slightest degree, and it follows upon this that military medical service must be unconditional—or rather it had to be so in the comparatively early stages of what is going to be a long struggle. But we are now completing the third month of the war. The first terrific pressure on military and general organisation has been met, and met with considerable success. It was inevitable that there should be some places where order could not be so quickly established as in other places. It was inevitable, too, that shortage in one direction should wear an aggravated appearance owing to an absolute excess of provision in another. There are things which can be got quickly, and things which it takes time to procure. There are men exactly fitted for certain duties, who may not be immediately available; and men whose services can be obtained at once, while their services, however valuable, are unfortunately not exactly what is most urgently required at the moment. At the beginning of August the country was weltering in these troubles, the war having broken out with such suddenness, but in every direction confusion has steadily yielded to the tireless labour of organisation. And the time has certainly come now when small and particular adjustments could be effected, although these would have been impossible when crying needs made it imperative that all orders should be general and unconditional.

In particular it may, we think, now be possible to permit some medical practitioners, whom mobilisation has removed far from their ordinary sphere of work, and whose value to the community would be much greater in that sphere than elsewhere, to make exchanges; and we hope and believe that the War Office will permit of the flexibility thus suggested. In the first place, there is no shortage whatever of medical men willing to serve their country anywhere and in any capacity. To our certain knowledge several thousand practitioners are willing to place themselves at the disposal of the War Office, or have absolutely done so already. Some of these men are younger than others, and in many instances are discharging no duties which cannot be effectively discharged by others. They are surely indicated for service abroad rather than those men whose absence for an indefinite time in, say, India or Egypt would mean a dangerous loss to the community amongst which they carry on their medical practice. It must be understood that the question of shirking does not for one moment arise; we are not pleading the cause of any medical men who wish to be quit of their patriotic obligations.

We are perfectly convinced that every single medical man who has volunteered for service during the war, or who by the possession of a Territorial commission has become a part of our fighting forces, has only one idea, and that is to do his best for his country. But there are very many instances where a man will get into the wrong place unless some individual exceptions to general rules are permitted. It is very difficult for representation of this sort to be made by any medical man if the slightest suspicion should attach to him as one who has desired to avoid personal risks or expenses. But if it becomes clear that certain exchanges are sanctioned in deference to the public need, and in order to preserve the health of the community, while in no way endangering that of the troops, then no difficulty will arise. Undoubtedly there are some medical men at the present moment away from their practices, and under indefinite orders to remain away, whose regular work cannot well be done by proxy, while their medico-military duties would not suffer in other hands. Some of these medical men may be asked to serve under conditions of Imperial service, when a difficult case is much aggravated by its probable duration for a long time. We have here an example of what could not be avoided in the face of a sudden mobilisation—namely, profuseness and scarcity occurring simultaneously. Evidently there is now being provided an excess of scientific skill and attention in some directions creating a dearth of valuable services in other directions. But we are confident that the existing position is now appreciated by the War Office, and that no obstacles will be raised to certain methods of adjustment.

Annotations.

"Ne quid nimis."

NATURE AND NURTURE IN MENTAL DEVELOPMENT.

MUCH difference of opinion has always existed as to the relative importance of the factors of heredity and environment respectively in the development of the individual. At the one extreme is the attitude of Lombroso, who believed that criminals are born and not made; at the other is the view that the individual can be what he chooses to be. Social workers, ignorant of, or unfamiliar with, the facts of heredity as they impress themselves on members of the medical profession, are apt perhaps rather to concentrate attention on the matter of environment, and to emphasise the handicap imposed by uncongenial surroundings; still more, of course, by actual lack of the ordinary decencies of life, by overcrowding, insanitation, and the like. Medical men, again, who are brought into contact, it may be, with a hereditary *tare* showing itself in the third and fourth generation, and aware also of the extreme frequency with which a neuropathic heredity, similar or dissimilar, can be traced in the subjects of nervous and mental disease, as well as in the mere defective, *arriéré*, or *déséquilibré*, may feel that the individual can rise superior to his surroundings but not to his heredity, and consider that mental development to its full extent can never be expected in a child handicapped from birth. The problem is far indeed from being simple. Social, educative, hygienic elements—all that is indicated by the term "breeding"—contribute to the development of that healthy mind in a healthy body which is not always attained by mere biological excellence. There is, however, a deeper significance for the individual in the possession of a normally functioning body than that which the inheritance of an unblemished strain gives. There is more in mental health than integrity of the nervous constitution with which the individual is endowed at birth. Researches of recent years show that there is a biochemical association and interrelation of all the organs of the body, and that the ductless glands and sexual glands generate subtle and potent chemical substances whose action—nutritive, stimulating, and controlling—on the nervous system is of fundamental importance. Aware as we are of the rôle played by instincts and emotions in the building up of character, we may nevertheless be somewhat unprepared for the statement that natural physiological processes associated with the rise into activity of these glands are of integral importance in the development of the passions and sentiments. Viewed in this light, character is compact of traits whose underlying basis is dependent on the normal activity of hitherto little understood and appreciated glandular structures, which, as has been said, influence the nervous system to an extent scarcely realised. Those who are interested in this question—and who can afford to ignore it?—should read the recent Chadwick lectures delivered by Dr. F. W. Mott, and now issued in a small volume with the title that heads this annotation.[1] To any who have followed Dr. Mott's recent work they will not, perhaps, be found to contain any very new or novel observations; but the writer has put together, in a concise and practical form, many instructive data bearing on the problem, and his book will well repay perusal. He draws a distinction between the hereditary raw material of mentality and the social heritage slowly built up by man, of which, as he says, the brain is the receptor and storehouse, and shows that the finished product of education depends for its efficiency both upon a good mental and bodily raw material and opportunity of reaping the full advantages of the harvest of human thought and progress. Dr. Mott possesses the enviable faculty of making the meaning of his deep researches clear. Simple such problems as he deals with can never be, but here is an author who removes all needless obscurity.

THE CONTAMINATION OF ARMY UNIFORMS.

THIRTY-SIX years ago we published a report on the Contamination of Uniforms provided to the British Army made for us by Special Commissioners. At that time, and often with the laudable desire to help soldiers' widows, a good deal of work was given out from the Government army clothing depôts. This was notably the case at the Pimlico depôt, and our Commissioners traced the making of certain uniforms to houses where there were cases of scarlet fever and small-pox. The report naturally caused considerable sensation. Questioned in the House, Mr. Gathorne Hardy, Secretary for War, said there had only been one case of small-pox during the previous five years among those who at the Pimlico works had handled the clothes as they were brought back from private dwellings where they might have been in contact with cases of infectious disease. The pertinence of the reply was lost, however, when it was shown that there were only three persons so employed, and it was felt that the danger to the army of home tailoring in insanitary surroundings was very real. A much closer watch over the premises where uniforms were given out to be made was instituted at once, and later some measures of disinfection were introduced. It would seem that the danger is still with us, though the state of our public health is now so good that it may be present in a less degree, while legislation against sweating has been of good effect. However, no one can read the descriptions of the life in the trenches, especially such trenches as the Germans have built near Soissons, and which our troops may penetrate, without feeling the need of exercising the greatest care to prevent the advent of specific disease germs in the line of battle. Soldiers who have to lead a life of appalling hardship for weeks on end, in hourly touch with death, and literally soaked in their vile environment would form an easy prey. The evil is not yet eradicated. At Bethnal Green a few days ago a master tailor had to answer two summonses for neglecting to keep a list of the names and addresses of outworkers according to the law. The offence leading to the present prosecution was discovered by the sanitary inspector at Bethnal Green, who ascertained that a woman was at work making an army greatcoat in a house where scarlet fever had broken out. The master tailor had failed to keep a list of outworkers, though he had given out work to three persons. It was urged in court that there had been risk of carrying infection to the men who were laying down their lives for the country. Nevertheless, the defendant was only fined 10s. and £1 18s. costs. Now that so many uniforms are required and must be made at the utmost speed, the risk of such neglect as that just described increases in due proportion to the pressure brought to bear. Extra watchfulness is therefore imperatively necessary.

THE DANGER OF DIFFUSION OF TYPHOID FEVER AND CHOLERA BY OYSTERS AND ITS REMEDY.

Professor E. Bertarelli, of Parma, has drawn attention to the possibility of practical prophylaxis with regard to infection by oysters. Assuming as proved that the bacillus typhosus and the cholera vibrio are not found as habitual denizens in oysters, these molluscs must be held innocent in themselves, but if either of these germs, and more importantly the cholera vibrio on account of its greater motility, reaches the valves of an oyster through the medium of infected water it will be caught in the meshes of the parenchyma, and, so to speak, "squat" there. It is, moreover, an established fact that, given the infection of a tract of sea coast with the germs of typhoid or cholera, and seeing that sea water is a good life-preserver, the pathogenic germs in question are enabled to concentrate in the oysters with relative facility, maintaining themselves there for a considerable period without changing their characteristics. However, the sojourn of these germs in the oyster, provided the infection of the water is transitory, cannot last for long periods of time, and, as a rule, does not exceed one week, but may reach two. Acting on this fact, the writer suggests a method of abolishing the risk of infection. By placing an oyster which has been tainted into pure sea water it will gradually free itself of its accidental flora. This scheme has been put into practice in the reservoirs at Concarneau in France, sea water raised mechanically being first passed through coarse filters, then through sand. The sea water thus filtered passes into reservoirs containing the oysters, where the water is slowly changed. In from six to eight days the purification of the oysters is completed. The technical details of such an installation are not described, but are stated to be extremely simple. With regard to the cost, no precise figures can be given for keeping a definite number of oysters in reservoir, but if the data given by certain French undertakings are approximately true, it must be believed that the cost would be represented by a very few pence of increase in the price of a dozen of the molluscs, including in this increase the capital expenditure for the plant, mortgages, cost of pumping the sea water, and administration.

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[1] Nature and Nurture in Mental Development. By F. W. Mott, M.D. Lond., F.R.C.P. Lond., F.R.S. London: John Murray. 1914. Pp. 151. Price 3*s.* 6*d.* net.

"TIPPERMALLUCH'S RECEIPTS."

Sir Walter Scott, in a memoir of his early life, penned about a century ago, records how at the age of three years he was often wrapped in a sheepskin taken from a newly slaughtered animal, and in this "Tartar-like habiliment" lay on the floor while his paternal grandfather and old General Sir George MacDougal, of Makerstoun, bent over him and tried to entice him to use his limbs by pulling their watches along the ground. He had fallen lame after teething, and his parents, though they were related to Dr. Wood and Dr. Rutherford, famous in the Edinburgh of their day, "grasped at every prospect of cure which was held out by the promise of empirics, or of ancient ladies or gentlemen." A raw skin or hide was, of course, supposed to be productive of strength. The idea lingers among savages to-day, but in the Scotland of 1774 it was pretty widely believed in by a nation famous for its education and rationality. That prince of sceptics, David Hume, died in 1776, but before his death the prevailing superstition in matters medical of his contemporaries had been strengthened by the publication of a second edition of "Tippermalluch's Receipts," a work which must be read to be conceived. Who "that worthy and ingenious gentleman" John Moncrieff of Tippermalluch may have been it is impossible at this distance of time to find out, for his name occurs in no biography and Tippermalluch figures in no gazetteer. There being a village of Malluch in Lanarkshire, however, we are perhaps right in inferring that Tippermalluch is in its neighbourhood, and that it belongs to the Celtic half of Scotland and had at one time strong Gaelic medical traditions. The book, which is comparable to the famous "Thousand Notable Things" of the south of England, of which an edition containing numberless quack remedies was published at Salisbury at the close of the eighteenth century, dates manifestly from a period long prior to 1775, when the second edition was published in Leith, or, indeed, from 1712 when the book first saw the light. So full of magic and of the influence of the stars are the "Receipts" that we are justified in supposing that they date from savage or pagan times. To quote only a few remedies. "The heart of a wolf eaten or drunken, cures the epilepsy." Again, "a wolf's skin worn about the middle" preserves from this disease. "For an hysterical passion, take the powder of the flesh of a wolf and wear a piece of the said flesh salted always about you." The last wolf is supposed to have been killed in Scotland in 1680, hence these remedies may be said to date from a period long prior to the eighteenth century. Others are concerned with amulets and charms. A ring set with a topaz is held to be a cure for "running of the reins." The root of satyrion held in the hand is an aphrodisiac. The hairs of a white dog hung round the neck are prone to mitigate epileptic fits, while coral and saffron, "rolled in the skin of a bladder" and hung round the throat cure a semi-tertian fever, as does an emerald worn in the same way. Plague may be cured by hanging the roots of the pimpernel round the neck, or by carrying about a carbuncle, ruby, garnet, hyacinth, sapphire, or agate. A man's own urine and fæces, passed through a cloth and drunk, are another remedy for the plague, while for fistula "a man's dung burnt, adding thereto powder of pepper, passeth all other kinds of cures." A "cancerous fistula" is cured by "ashes of a dog's head burnt." Goats' dung takes away pain and swelling. Dung is of constant use; this points back to the time when savages believed that excrement, urine, blood, and so forth, contained the immortal element in man. Akin to the foregoing usages is Tippermalluch's recipe for a wound in the breast—"Cause the patient suck the milk of a woman's breast, and also make injections of the same in the wound." Human milk is prescribed in the same way for consumption. The remedies are mostly older than the age of signaturism, and surprising as they appear there is a factor common to many of them—namely, the idea that the humours and excrements of the body are of medicinal value. As a rule, the old chap-books, printed in the South, are shy of appearing too openly superstitious, but in this work a long section is openly devoted to the subject of "mischievous acts, and putting of devils to the flight." St. John's wort, known as *fuga demonum*, hung in a house hinders these last. And we are further told that "whoever carries upon him eringo roots shall be preserved from witchcraft. The loadstone keeped upon a man removes disorder between man and wife. A pyot roasted speedily recovers the sick to health, and relieves all who have been enchanted from their birth." This prodigious book of pagan receipts was no sinister secret publication. It appears to have been sold by an enterprising bookseller, one William Coke, whose detailed list of wares must have rendered him extremely popular among all classes in Midlothian.

THE MEDICAL REGISTER.

WE wish to draw attention to the importance of notifying changes of address to the Registrar of the General Medical Council for insertion in the Medical Register. Omission to do this sometimes leads to a temporary removal of the name, with its consequent inconvenience; and apart from this the Register is the official list of the medical profession, and all should assist to keep it accurate. The Register is now singularly free from error, but it can only be kept so by the coöperation of the medical profession, who are urged to send all alterations of residence at once in a legible hand to the Registrar at 299, Oxford-street, London, W., and such communications should be signed with the full name. A statement of the difficulties which arise through failure on the part of practitioners to advise the Registrar of their changes of address will be found in a letter from Mr. A. J. Cockington, the acting Registrar, which we publish this week. Proceedings in the courts have shown that the slackness of certain members of the medical profession in this respect has been taken advantage of by the impersonating rogue.

PLAGUE CLOUDS IN SOUTHERN EUROPE.

Apart from imported cases and a few localised outbreaks, of which the Oporto epidemic in 1899 was the most serious, Europe has enjoyed a comparative immunity from plague during the 20 years in which the present pandemic has been ravaging most quarters of the globe. During the past few months, however, outbreaks of the disease have been reported in three countries in Southern Europe—namely, Greece, Italy, and Portugal—in the order named, as well as in certain Levantine ports which are in frequent communication with Europe by means of shipping. It is well known to epidemiologists that since 1899 plague has been annually epidemic in Egypt, including the Mediterranean ports of Alexandria and Port Said, and that the malady has manifested itself at various ports on the coast of Syria and along the southern and western shores of Asia Minor. During the summer months of the current year plague was reported to have occurred in the ports of Jaffa, Beirut, and Tripoli in Syria, and in Adalia and Smyrna in Asia Minor.[1] The disease also appeared shortly afterwards in several islands in the Ægean Sea lying off the western coast of Asia Minor, including Rhodes, Chios or Scio, and Mitylene or Lesbos; its presence was likewise observed about the same time in the Greek island of Syra, the most important of the Cyclades. In September several cases of plague were notified at the port of Salonica on the coast of Macedonia, and at Piræus, the port of Athens, 12 persons were attacked by the disease. During the same month a group of ten plague cases occurred in the seaport town of Catania in Sicily, and early in October eight other cases were reported in Portugal, in one of the suburbs of Lisbon. It is probable that the islands in the Ægean Sea were infected from one or other of the affected ports in Asia Minor, and that the infection was carried from these islands westwards to Greece and perhaps to Sicily, though locally Alexandria is regarded as the source of the mischief in the latter case. In this connexion it has to be remembered that the islands of Chios and Mitylene have been held by Greece since the last Balkan war, and that Rhodes is at present occupied by the Italians, so that it is not unlikely that the disease may have been conveyed through shipping from the occupied islands to Salonica, Syra, and Piræus on the one hand and to Catania on the other. The recent infection of the Lisbon suburb is more difficult to account for, and as yet no definite information is available to explain the occurrence. So far as is known Portugal has remained free from plague since the early months of 1900, when the Oporto epidemic of 1899 came to an end, after 310 persons had been attacked, of whom 107 died. The origin of that outbreak appears never to have been satisfactorily cleared up. As regards current plague in Portugal's possessions outside Europe the presence of the disease in the island of Terceira, in the Azores, was reported last December, but no cases have been heard of during the present year. It is, however, possible that the disease has been appearing in the Azores during 1914, and that cases have been intentionally concealed, or have been overlooked owing to their mild character. The infection, therefore, may have been brought by ship from Terceira to Lisbon. Be this as it may, the fact remains that groups of plague cases quite recently have occurred almost simultaneously in Greece, Italy, and Portugal. These outbreaks will doubtless be dealt with in a satisfactory manner by modern methods with a view to prevent any further extension of the infection, and British port medical officers of health will also no doubt be keeping a sharp look-out for vessels hailing from the infected ports of Southern Europe and the Levant so as to avert the landing of plague upon our own shores.

At the conclusion of the delivery of the Harveian oration by Sir Richard Douglas Powell before the Royal College of Physicians of London on Monday last, Sir Ronald Ross, F.R.S., was presented with the Bisset Hawkins Memorial medal for distinguished services in the advancement of sanitary science and public health.

The Bradshaw lecture on "Some Clinical Contributions to the Study of Glycosuria" will be delivered before the Royal College of Physicians of London by Dr. Nestor Tirard on Tuesday, Nov. 3rd, at 5 o'clock.

FURTHER NOTES UPON THE WOUNDED IN THE PRESENT CAMPAIGN.[1]

By G. H. Makins, C.B., F.R.C.S. Eng.,
COLONEL, A.M.S.; CONSULTING SURGEON TO THE FORCES OVERSEAS.

Oct. 14th, 1914.

The last fortnight has seen a great decrease in the number of wounded men in the hospitals both in Paris and along the western lines of communication, while it is now possible to form a more definite opinion as to the progress made by the wounds themselves. Subsequent events have by no means belied the impression gained at an earlier date, that the wounds would do well when the patients could be at rest and under more satisfactory conditions. The means of transport have been very materially improved both with regard to the hospital trains themselves and as to the rapidity with which the patients can be removed to the general or stationary hospitals. Under certain conditions the increased fleet of motor ambulances has also proved of value, but the cars are only suitable for cases that can bear much shaking.

I have just returned from a visit to the hospitals along the western lines of communication and have had the opportunity of seeing a number of the more severe cases after an interval of 14 days. A very great difference is to be observed; although the wounds have been suppurating the patients are in good condition generally, and locally granulation has been rapid and healthy with steady contraction of the deep cavities and extensive wound surfaces. The gangrenous cellulitis has disappeared, and it appears probable that the most serious factor in the infections was streptococcic in nature. It is to be hoped that with the more settled military conditions now existing this complication may become a thing of the past. Multiple proximal incisions proved the best method of treatment.

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[1] The Lancet, Oct. 10th, 1914, p. 912.

[1] The Lancet, Oct. 10th, 1914, p. 905.

The Treatment of Tetanus.

In this region the more serious complication of tetanus has also become far less common in concurrence with the less seriously septic state of the wounds. It is still too early to form any opinion as to the success of the prophylactic measures which have been resorted to, but much is to be hoped for from them, and possibly a still greater advantage may be gained from the removal of our troops from a district in which tetanus is notoriously common amongst the civil population in times of peace.

The methods of treatment which have been adopted have ranged over the whole area of past experience, the only routine plan having been the injection of antitetanic serum in large doses. At the Pasteur Institute, where two cures have been obtained, serum treatment by subcutaneous injection was the main element; at other hospitals the serum has sometimes been administered intravenously or by the intrathecal route. Beyond this, in some cases 20 per cent. peroxide of hydrogen solution has been injected subcutaneously and oxygen inhalations have been tried, while in all peroxide of hydrogen has been employed locally to the wound. Subcutaneous injections of magnesium sulphate have been tried to control spasm. Especially at Angers subcutaneous injections of 2 per cent. carbolic acid have been the favourite treatment, as much as 22 grains being administered per diem without any unpleasant results. Both in the English and French hospitals there this method was regarded with much confidence, and at No. 5 General Hospital I was shown two cases upon the high road to recovery treated by this method in combination with serum. In a large majority of all the cases chloral has been given by mouth or by rectum in large doses, and chloroform inhalations have been resorted to for severe and painful spasm.

In spite of this very varied treatment the main factor in the prognosis has, as in past experience, proved to lie in the length of the incubation period. Few if any cases have recovered where symptoms developed before the tenth day following the wound. Of some ten cases promising recovery which have come under my own observation the incubation period varied from 10 to 15 days. The type of disease has been somewhat variable, the only constant features being the "facies" and trismus. In the most acute cases general spasm was not infrequently absent, but in these the intense general septicæmia no doubt overshadowed the purely tetanic signs. In many cases local spasm of the affected limb, often extremely painful, has been a marked character.

Local surgical measures have been little employed; the wounds have been too large for excision, and in the few instances in which amputation of a limb has been resorted to no favourable result has been attained. The same may be said about the method favoured by some of the French surgeons of dividing the great sciatic nerve when the leg or foot was the seat of injury.

Nature of Injuries.

With regard to any special characteristics of the local injuries not much remains to be said. The common lodgment of fragments of shells is naturally a marked feature, also the very large area of laceration within when the wound of entry is comparatively small, suggesting a revolution of the missile within the limb continued after the moment of impact. I have twice seen the iron wad of a shrapnel shell which had been removed, once from the leg, and once from the buttock, in either case the missile having entered edgeways by a very moderate-sized slit wound. Retained pointed bullets are far from uncommon, and, as has been before remarked, contour wounds, especially around the chest wall, are often seen. Wounds of the head seen in the hospitals are of the tangential type in a very great preponderance; those traversing the skull are comparatively rare. This is no doubt to be explained by the frequency with which the injuries are caused by shrapnel bullets travelling with low velocity. The depressed fragments produced by the shrapnel bullets are of a larger size than those resulting from blows from rifle bullets of small calibre. There seems little doubt that the injuries produced by the English bullet are more severe as a rule than those resulting from the German. It may be that this is partly due to a lower velocity of flight in the case of bullets fired from machine guns, which are so freely used by the German army. Either bullet, however, when striking with high velocity is prone to fragmentation. Trephining of the skull performed for local pressure symptoms has as a rule been followed by very gratifying results, more or less complete recovery from paralysis occurring in many cases, showing that the area of destruction is not necessarily great. The spinal injuries are as usual of a depressing character, but where paraplegia has resulted from shrapnel wounds not actually impinging on the spinal canal recovery seems more rapid than in the case of similar signs accompanying wounds by bullets of small calibre. Signs of union are evident in a considerable proportion of the compound fractures.

Installation of a "General Hospital."

A number of the general hospitals are now in full working order, some installed in buildings, some utilising their tents. The Indian type of marquee is admirable for hospital purposes. The very full and complete equipment of these hospitals is very readily adapted for use within a building, in which case the tents can be stored or are available if extension of accommodation is needed. A number of the hospitals have been accommodated in buildings, some in large hotels or club premises, others in school buildings. No. 4 General Hospital at Versailles is established in the luxurious Trianon Palace Hotel; the general excellence of this hospital has already been adverted to in the public press, and it has been doing a large amount of good work. Such buildings, as is the case with smaller similar hospitals in Paris, possess the advantage of some very excellent large wards in the public rooms and abundant bath and sanitary arrangements, but are somewhat more difficult to work on the upper floors from the number of rooms in which the patients are distributed. This difficulty is reduced to a minimum in the Trianon Palace Hotel in consequence of the simplicity of the building, all the rooms being arranged on either side of long straight corridors running the whole length of the hotel. Up to the present time the patients have also enjoyed the great advantage of a charming garden in which those who are up can roam or sit the greater part of the day.

A somewhat more difficult problem is presented when a building not designed for residential purposes is provided. A good illustration is afforded by No. 5 General Hospital, which had allotted to it a large new school building, nearing completion, but not yet equipped for its purpose. The building had been first utilised as a temporary barracks, and when the soldiers went out it was left in the condition not uncommon after temporary occupation by troops. The first task was to cleanse the building itself and clean up the surrounding ground which had served the purpose of a general latrine. The water-supply of the town was connected with the pipes already existing within the building, and electric light was installed throughout. The type equipment of a general hospital was then introduced to convert the empty rooms to their new purpose, and in a few days several hundred patients were admitted for treatment.

A commodious operating theatre, well lighted for use by day or night and thoroughly equipped with instruments and sterilising apparatus, was arranged, and in an adjoining room the X ray outfit was set up. On an upper floor a pathological laboratory was established. To supplement the sanitary arrangements of the building a range of latrines was set up in a distant part of the grounds for the use of patients not confined to bed and the staff of orderlies. The latter were lodged in tents erected in the grounds. Beyond this an excellent dispensary and the store-rooms necessary for the working of a general hospital were established, and also a service lift for the conveyance of stores to all four floors, the latter at the extraordinarily modest cost of 310 francs.

A thoroughly efficient hospital was thus obtained in the course of a few days. At the time of my visit a large amount of work had been done there, and to illustrate the thoroughness with which it was performed I may mention that the skiagram of every fracture or case in which a missile was retained was to be found by the side of each patient's bed, and of many of these excellent prints had been made; there were also photographs of several of the recent wounds. In the laboratory I saw cultivations from some of the wounds, and the organism in the blood of a case of enteric then present in the hospital. Much ingenuity had been shown in the devising of splints, especially in the employment of the aluminium bands forming a part of the service equipment.

The cases throughout were doing well, and judging by my own experience no better military hospital on active service could be wished for. I have purposely chosen this hospital for description because it appears to illustrate the initiative required in the installation of a "general hospital" under unusual conditions which have no doubt had to be met with elsewhere, and which are not, I think, fully appreciated by those without experience of active service.

PLYMOUTH INSURANCE COMMITTEE.—Owing to want of funds the Plymouth Insurance Committee has been unable to settle in full the accounts of the local chemists who are dispensing under the National Insurance Act. This has given rise to a considerable amount of dissatisfaction, and last week a deputation waited upon the Members of Parliament for the borough and urged them to use their influence with the Government to get more money provided for the purpose.

EPSOM AND EWELL WAR HOSPITAL.

By EDMUND OWEN, F.R.C.S. ENG.,
SURGEON TO THE FRENCH HOSPITAL, LONDON.

AT the outbreak of the war thoughtful people at Epsom and Ewell decided to equip a hospital for the reception of wounded soldiers, and they were fortunate enough to acquire for this purpose, through the kindness of the Grand Stand Association, the large new building for the restaurant at the Grand Stand, and they at once set to work to prepare it for the object in view. Shortly after this the medical staff asked me to act as consulting and operating surgeon as circumstances might require. I was given to understand that the patients sent there for treatment would probably be such as would merely need rest after having been dealt with at some other institution, Epsom being rightly regarded as an ideal place for convalescents. The building, having been duly furnished and equipped, was visited by an official from the Royal Army Medical Corps, who was so pleased with the place that he informed the local medical staff that they might, after all, be called upon to receive more important cases than they had been led to expect.

On Thursday, Oct. 15th, the local staff were told that the reception of 31 cases was to be provided for in the course of an hour or so, that the men had just been landed at Dover, and that they were coming *viâ* Guildford. Mr. Nigel Colman and others had motor ambulances waiting at the South-Western Railway station, and many other friends helped with cars and taxis, the station and its approaches being kept clear by drafts from the Universities and Public Schools battalion which is in training at Epsom. The station-master had thoughtfully arranged that the train coming up from Guildford should be emptied of its patients upon the *down* line, so that the wounded could be placed in the ambulances on the side convenient for the Grand Stand, as otherwise they would have to be taken across the line by an awkward subterranean passage or in some other way. Nothing could have been better. But unfortunately some less sympathetic but more highly placed official descended from Waterloo Station and upset the plan, insisting that the stretchers should be carried down the steps, along the subterranean passage and up the stairs on the other side, and he absolutely refused to allow the adoption of the proposed arrangement for the comfort of the soldiers. His interference in the matter caused great discomfort and unhappiness. This, however, seemed to be the only hitch in the evening's work, which had all been very carefully planned out.

At about 8 o'clock P.M. I received an urgent call to Epsom, and was asked to bring instruments with me, as it appeared that some of the men who were even then arriving were evidently in a very bad way.

Notes of Cases.

The first case brought into the improvised theatre was a man with an opening into his abdomen from which a piece of omentum of the size of a small glove was hanging. The wound was foul and suppurating. The parts were cleaned up with tincture of iodine. The omentum was drawn out a little further, tied in two pieces, and cut off, the wound being covered with an iodine pad. No sutures were used.

The next man placed upon the table had a bullet-wound of entrance in the buttock of the size of a small pea, whilst the tissues at the front of the groin, at the exit wound, were very widely blown away, the sartorius and much of the vastus externus being torn across and the skin being widely destroyed. The damage done at the field of exit of the bullet was remarkable and suggestive. The wound was septic.

The third case was one of compound, comminuted fracture of the humerus just below the shoulder-joint. This was one of the worst cases which we had. However, we did our best to try to save the limb, removing many loose fragments of bone and carefully swabbing out every part of the large septic wound with tincture of iodine. It was felt at the time that the probability of amputation being demanded was great, but it was deemed right to give the man the chance. The next day he was comfortable, but on Saturday afternoon, when the wound was dressed under an anæsthetic and again explored, it was unanimously agreed that amputation should be done through the shoulder-joint on the following day—provided the man gave his consent. Amputation through the shoulder-joint was performed on Sunday afternoon last.

Another man had a wound a little above the great trochanter of the left femur; the bullet had comminuted the upper end of the thigh bone and had made its escape through the back of the perineum, where was a lacerated wound discharging pus. The case was one of extreme gravity, but it did not lend itself to active surgical measures. It was impossible even to render the wound aseptic. On Sunday afternoon the man expressed himself as feeling much better. We found him smoking a pipe and reading a magazine, and he is now doing well on a Hodgen's splint.

Amongst other serious cases of bullet wounds was one of compound, comminuted fracture of the external malleolus. On account of cellulitis and extensive suppuration amputation below the knee was performed last Wednesday morning. In a case of injury to the knee it was impossible to be sure whether the accompanying synovitis were septic or not. This man was brought into the theatre on Monday afternoon, an X ray picture having been taken of the knee on the previous evening by Mr. Ede with an apparatus which he had set up in the building. The plate showed with great clearness a bullet on the outer side of the femur, but so far above the ordinary position of the synovial membrane that we all agreed that it must surely be outside the joint. On cutting down to the bullet through the vastus externus and feeling for it with the finger it at once slipped away, and had evidently hidden itself in the joint. On freely opening the synovial membrane and passing the finger under the patella it was found near the inner tuberosity of the tibia, from which place it was no easy matter to fish it out across the joint. The joint contained much fluid and some jelly-like material and a mass of decolourised blood clot. Two pieces of loose cartilage were also found and removed. As it was probable that the interior of the joint was septic it was washed out with some hot chlorinated soda solution and a drainage-tube was inserted.

Among other cases I may mention also one in which the chest was implicated and the adjacent area of the lung was dull and crepitating; one in which the abdomen was involved, and one in which the soft tissues of the loin had been widely undermined. A most unfortunate feature was that every wound was septic. On Sunday afternoon the men were all going on well.

One young soldier was so ill at the railway station that he was expected fatally to collapse before reaching the hospital, and when he was placed in bed he was almost pulseless. He was treated by infusion and by the injection of adrenalin. He had a bullet wound above each great trochanter, and as there was some blood in his urine we feared that his bladder might be damaged. He was so ill, however, that exploration was out of the question; but as he was slightly better in the morning we thought it right to take the risk of placing him under an anæsthetic. On passing a catheter we drew some blood-stained urine, but the bladder held apparently all the sterilised water which we injected. Placing him in the Trendelenburg position we rapidly exposed the front of the bladder without opening the peritoneum, and it was then found that the bullet had traversed the roof of the urethra, and that a leakage of urine was taking place from an opening just behind the triangular ligament. We therefore closed the surface wound, leaving a space above the pubes for drainage. But notwithstanding the adoption of further active measures against collapse the unfortunate lad sank exhausted.

Amongst the 31 cases there were many others of a serious nature which were dealt with by Mr. Andrew McAllister and by the members of the hospital staff, Dr. T. A. Alexander, Mr. T. L. Braidwood, Dr. E. G. C. Daniel, Dr. John Ferguson, Dr. C. A. Ormerod, Dr. W. H. Rayner, Dr. E. N. Reichardt, and Dr. W. Thornely, and myself. We were all kept busy from late in the evening until nearly 4 o'clock in the morning.

What specially struck me was the sublime courage and endurance of these wounded men. There was never a word of complaint or impatience. But soldiers are much alike, I suppose, all the world over. We have, for instance, about 30 wounded Belgians under treatment at the French Hospital in London who are just as uncomplaining and cheerful, and I doubt not that the German soldiers are equally good patients. It is a great thing to be a soldier: he is usually a real *man!*

The Hospital and Staff.

In conclusion, I would like to speak critically of this hospital, which has been established at the Grand Stand. I have never been in wards which are more attractive or satisfactory. The bedding, furniture, and linen are most excellent, and it was pleasant and reassuring to see these wearied soldiers decked out in the flannel garments which most of us know so well by sight, as we have watched them being cut out and made up by our womenfolk at home. I can assure our needle-workers that their labour is of the utmost value. Many of the men fell sound asleep the moment they were put into bed, and one was loth to wake them as their turn came for examination; but it had to be done. One of them said to me, "What a treat to be brought to such a place as this." He was grateful for the thoughtful kindness shown him; soldiers always are delightful people to have as patients.

The hospital is staffed by a resident medical officer, Mr. W. B. Peacock—a gentleman who struck me as being remarkably well suited for the post—a matron and a staff of eight nurses, some willing ambulance ladies, and a squad of four men of the

St. John Ambulance Brigade. These men did the shifting of the patients to and from the operating theatre and helped in the orderly work of the place. They belonged to the Maidenhead division, and if their instructor, Dr. R. E. Whitting, could have seen them carrying on he would have felt himself well repaid for the great pains and care which he has evidently devoted to their instruction. Nothing has shown the value of the work of the Order of St. John in time of peace more clearly than the way in which the services of the members of the brigade have been drawn on since the outbreak of the war; between 5000 and 6000 of them are now engaged in the field or in hospital work as orderlies. Not only is this a valuable help to the medical department of the army, but it is also a clear proof to men and women who have been giving so much of their leisure and thought to the advancement of the Brigade (on what some people may have regarded as sentimental grounds) that the work of the Order has been based upon a foundation which is as solid and useful as it is ancient.

THE CLAIMS OF BRITISH SPAS.

(Continued from p. 958.)

IV.—Droitwich.

The reputation of Droitwich as a health station is based almost entirely upon its famous brine wells. The confidence in the curative properties of these potent saline waters is such that auxiliary aids to treatment are seldom employed, although they are available. The waters are saturated with salt, and they could not hold a grain more than they do, since the limit of solubility is reached by contact with the rock-salt deposits below. The slightest evaporation of the water leads to the deposit of salt. The specific gravity of the brine is 1·195 and the total salts amount to no less than 317·328 grammes per litre, or about 26 per cent. Amongst salts present are the sulphates of sodium, calcium, and aluminium and chloride of sodium, but these altogether amount to about 7 grammes per litre. The brine is decidedly radio-active. It is important to observe that the salt obtained on evaporation obviously loses its radio-activity in the course of this process, and that therefore the brine of Droitwich cannot be imitated by dissolving any salt obtained by evaporation in water again.

Treatment at Droitwich succeeds mainly by its favourable influence on nutrition, whilst, when necessary, the diet of the patient is carefully regulated. The medical authorities at Droitwich make few and simple claims for the therapeutic uses of the water. They do not set out a wide category of disorders as all receiving relief from brine treatment. But while this is the case, the value of these waters in the treatment of gout, rheumatism, sciatica, the uric acid diathesis, and in completing the recovery process of acute illnesses has been well established.

There are two bathing establishments at Droitwich—the St. Andrew's and the Royal Baths. In 1836 the latter were opened, and since that time a very large number of patients suffering from rheumatism, sciatica, gout, and nervous disorders (insomnia) have sought relief at Droitwich. The baths have now grown to the dimensions of a continental spa; hotel accommodation has been increased and improved, and every effort is put forward to make the place attractive to the visitors. Important extensions were made to the St. Andrew's Brine Baths in 1907. These additions consist of an enlarged entrance hall, lounge, waiting-rooms, and a new series of ladies' baths, all well planned, substantially built, and conducive to the comfort of the patient. There are also two large swimming-baths, one for ladies and the other for gentlemen.

Graduated exercises can be performed with advantage in this natural brine. The buoyancy of the water is so great that the bather can lie on the top as though lying on an air bed. He cannot possibly sink. When lying upon the water the limbs are equally supported in every direction, and the patient can thus perform certain movements which he could not attempt on *terra firma* on account of the pain. These exercises are claimed to have been successfully employed in the treatment of scoliosis and to exercise painful joints, and are thus most useful during the convalescent stage of sciatica and in the after-treatment of fractures and other surgical injuries.

Altogether the accommodation provided includes private hot reclining baths, douche, needle, vapour, deep chair baths, and three commodious and elegant brine swimming baths. There are also special rooms for Aix douche baths, and effervescing baths on the well-known lines of treatment for chronic diseases of the heart at Nauheim.

Social attractions are well looked after; there is a golf course, and the neighbourhood abounds in places of beauty and interest, as, for example, Worcester, Malvern, Tewkesbury, Gloucester, Hereford, Stratford-on-Avon, and Kenilworth.

The Droitwich waters occupy amongst balneological stations a unique place, since no other water is known to possess the same saline strength. It is physically and chemically impossible, in fact, for a water to contain more salt than Droitwich brine, since it is saturated under some pressure in the natural wells beneath. It is about ten times the saline strength of sea water.

(To be continued.)

Royal Academy of Medicine in Ireland.—The following have been elected office-bearers for the ensuing year:—President: Professor Walter G. Smith, M.D. General Secretary: Professor J. Alfred Scott, M.D. Foreign Secretary: Sir John W. Moore, M.D. The sectional presidents will be as follows:—Medicine: Professor J. A. Lindsay, M.D.; Surgery: Professor F. Conway Dwyer, M.D.; Obstetrics: Dr. M. J. Gibson; State Medicine: Dr. T. P. C. Kirkpatrick; Pathology: Dr. J. B. Coleman, C.M.G.; Anatomy and Physiology: Professor E. J. Evatt, M.D.

Lectures on Infant Care.—To meet the demand for training expressed by many voluntary health workers enrolled since the war for service at local infant welfare centres, &c., the National Association for the Prevention of Infant Mortality and for the Welfare of Infancy, in coöperation with the Association of Infant Consultations and Schools for Mothers and the Women's Imperial Health Association, is holding a course of lectures on infant care in London at the Royal Society of Medicine, 1, Wimpole-street, W., on Mondays, and at the Medical School of Charing Cross Hospital, 62, Chandos-street, W.C., on Thursdays, from Oct. 19th to Dec. 17th, at 5.30 P.M. In addition to the lectures facilities will be provided for gaining practical instruction through attendance at infant consultations, and classes will be held at certain selected centres. An examination will be held at the close of the course and certificates awarded. The fee for each student is 5*s*. Further particulars may be obtained from Miss Halford, secretary, National Association for the Prevention of Infant Mortality, 4, Tavistock-square, London, W.C.

A MONTHLY RECORD OF ATMOSPHERIC POLLUTION.

WE publish this week a first series of results obtained at various stations in the country in regard to the quantity and quality of the deposit collected out of the atmosphere by the standard gauges set up at these places. The tables below give the rainfall for the months ending April 30th and May 31st, 1914, and the amounts found of insoluble matter (tar, soot, dust) and soluble matter (sulphates, ammonia, and chlorine) in the volume collected. It will be seen that the laboratory findings are calculated into metric tons of deposit per square kilometre during the month. One metric ton per square kilometre is equivalent to approximately 9 lb. per acre, or 2·56 English tons per square mile. These comparative figures are well worth studying, inasmuch as they show considerable variations in the degree of atmospheric pollution at different stations. To take one example, Malvern shows for the month of April a total deposit of solid matters of 1·76. These contained no tar at all, and but little carbonaceous matter. In the same period, however, at Liverpool the total solids amounted to 15·97 metric tons, and the tar to 0·36 ton. All through there are most interesting and significant comparisons to be made, and when the series for the year is completed a very valuable and instructive record will be available. The Committee for the Investigation of Atmospheric Pollution may be heartily congratulated on the practical movement they have successfully organised to obtain actual records of the atmospheric pollution which is taking place throughout the country.

COMMITTEE FOR THE INVESTIGATION OF ATMOSPHERIC POLLUTION:

Summary of Reports for Month ending April 30th, 1914.

1	2	3	4	5	6	7	8	9	10	11	12
Place.	Correspondent.	Rainfall in millimetres.	Metric tons of deposit per square kilometre during month.								
			Insoluble matter.			Soluble matter.		Total solids.	Included in soluble matter.		
			Tar.	Carbonaceous other than tar.	Ash.	Loss on ignition.	Ash.		Sulphate as (SO_4).	Chlorine (Cl).	Ammonia (NH_3).
ENGLAND—											
Exeter	Mr. H. Lloyd Parry, Town Clerk.	32·30	0·04	2·05	4·71	0 97	1·61	9·38	0·74	0·29	0·02
Kingston-on-Hull	Mr. A. R. Tankard, Public Analyst.	10·25	0·08	2·71	4·76	0·94	2·50	10·99	1·34	0·31	0·03
Liverpool	Dr. E. W. Hope, M.O.H.	22·23	0 36	2·18	8·01	2·40	3·02	15·97	1·93	0·61	0·13
London—											
Embankment Gardens ...	Mr. J. Ollis, Chief Officer, P.C.D., L.C.C.	15·61	0·27	5·38	6·31	0·72	3·03	15·71	1·40	0·39	0·04
Golden-lane	Dr. W. J. Howarth, M.O.H.	19·27	0·03	1·41	2·24	1·15	2·24	7·06	1·38	0·42	0·07
Meteorological Office ...	Director, THE LANCET Laboratory.	18·70	0·05	2·43	5·63	1·87	2·61	12·59	1·46	0·98	1·11
Malvern	Mr. W. Osborne Thorp, Engineer and Surveyor.	32·19	0·00	0·14	0·21	0·39	1·03	1·76	0·34	0·14	0·17
Newcastle-on-Tyne	Dr. H. Kerr, M.O.H.	15·31	0·17	4·05	10·55	0·98	2·17	17·92	1·27	0·24	0·04
York...	Dr. Edmund M. Smith, M.O.H.	13·23	0·11	2·17	3·26	0·96	1·69	8·19	0·78	0·34	0·52
SCOTLAND—											
Greenock	Mr. James Devine, Sanitary Inspector.	94·70	0·03	1·32	3·13	1·71	3·45	9·64	1·37	0·81	0·07
Leith	Mr. Thomas Bishop, Sanitary Inspector.	24·63	0·08	1·01	3·27	1·53	1·02	6·91	0·79	0·21	0·05
Paisley	Mr. W. W. Kelso, Sanitary Inspector.	75·80	0·08	4·17	6·46	2·42	2·73	15·87	1·67	0·76	0·09
Summary of Reports for Month ending May 31st, 1914.											
ENGLAND—											
Birmingham	Dr. J. Robertson, M.O.H.	35·60	0·18	4·79	15·92	1·71	7·26	29·86	2·99	1·57	0·48
Exeter	Mr. H. Lloyd Parry.	41·80	0·05	2·37	3·56	0·79	1·97	8·74	0·77	0·31	0·00
Kingston-on-Hull	Mr. A. R. Tankard.	44·61	0·16	3 86	4 51	2 50	3·39	14·42	1·74	0·52	0·05
Liverpool	Dr. E. W. Hope.	56·14	0·16	4·11	8·96	2·47	4 94	20·64	3·37	0·72	0·22
London—											
Enbankment Gardens ...	Mr. J. Ollis.	21·47	0·61	7·18	6·51	0·86	2·62	17·78	1·09	0·30	0·01
Golden Lane	Dr. W. J. Howarth.	46·74	0·08	3·37	5·72	1·68	3·74	14·59	2·40	0·65	0·18
Meteorological Office ...	Director, THE LANCET Laboratory.	35·20	0·05	1·57	2·96	0·00	2·11	6·69	1·14	0·82	2·09
Malvern	Mr. W. Osborne Thorpe.	34·76	0·02	0·27	0·41	0·69	1·25	2·69	0·59	0·18	0·02
Newcastle-on-Tyne	Dr. H. Kerr.	29·19	0·12	3·18	5·56	0·93	1·93	11·72	1·37	0·25	0·04
York	Dr. Edmund M. Smith.	33·73	0·02	0·85	3·15	1 08	1·35	6·45	0·91	0·38	0·10
SCOTLAND—											
Greenock	Mr. James Devine.	52·30	0·04	1·93	4·51	1·39	2·25	10·12	1·01	0·22	0·82
Leith	Mr. Thomas Bishop.	46·10	0·49	0·79	2·92	1·19	1 19	5·32	0·98	0·18	0·09
Paisley	Mr. W. W. Kelso.	49·68	0 15	4·53	6·66	1 20	1·99	14·55	0·89	0·35	0·02

Col. 4 includes all matter insoluble in water but soluble in CS_2. Col. 5 includes all combustible matter insoluble in water and in CS_2. Col. 6 includes all earthy matter, fuel, ash, &c. One metric ton per sq. kilometre is equivalent to: (*a*) Approx. 9lb. per acre; (*b*) 2·56 English tons per sq. mile; (*c*) one gramme per sq. metre; (*d*) 1/1000 millimetre of rainfall (see Col. 3).

Similar results obtained in THE LANCET Laboratory in regard to the pollution of the metropolitan atmosphere have already been published in our columns,[1] and the future records of the committee as they come forward from month to month will be issued. We are undertaking ourselves in THE LANCET Laboratory the analysis of the deposit collected at the Meteorological Office in London.

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[1] The Sootfall of London, its Amount, Quality, and Effects: An Appeal for Soot-gauge Observations, THE LANCET, Jan. 6th, 1912.

THE SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH.

IT may seem to some an ill-chosen opportunity to forward the claims of the South African Institute for pecuniary support, but in our opinion no better time could have been selected than that in which, on the one hand, the powerful and loyal support of South Africa is being given us in our struggle against Germany, and on the other the need for organised medical research is being brought home to us by military conditions. The South African Institute for Medical Research was established in Johannesburg under the joint control of the Government of the Union of South Africa and the Transvaal Chamber of Mines. The Government contributed the site and has made itself responsible for an annual subsidy of £5000, while the mining industry has provided the building and equipment at a cost of £40,000. Hitherto the energies of the Government have been directed towards veterinary research, upon the results of which the progress of South African agriculture largely depends. This useful branch of work has been most liberally supported by the Government, and has been carried on under Sir Arnald Theiler, the Director of Veterinary Research in the Transvaal and the author of many publications on the tropical diseases of domestic stock which have attracted much attention. The support which the Government is extending to medical research is further evidence of the enlightened and progressive spirit now animating the great self-governing subcontinent.

The buildings of the institute which crown the hill to the north of Johannesburg were designed by Mr. Herbert Baker and Mr. G. G. Fleming, the former of whom is one of the architects commissioned to design the new capital of India at Delhi. Sir Almroth Wright when on a visit to Johannesburg gave advice as to the general plan. The further elaboration of the details was entrusted to Dr. W. Watkins-Pitchford, then Government Bacteriologist for the Transvaal. Dr. Watkins-Pitchford, who has now been in Johannesburg for some three or four years, is the director of the institute; he was for ten years Government Pathologist to the Natal Government.

The institute has already published four memoirs, the first of which constitutes a very able study, from the statistical side, of Pneumonia as it affects the Native Mine-labourer. This memoir was reviewed at length in our columns on its appearance. The second and third deal with the Serological Classification of Pneumococci and the Ash of the Silicotic Lung respectively. A fourth publication, which has not yet reached us, is announced, and, like the first, is by Mr. G. D. Maynard, who was secretary of the Government Commission on Miner's Phthisis.

The institute is, unfortunately, not endowed in any way and depends for the carrying on of its work upon the generosity of private individuals, and we can recommend its claims to those of our readers who may be able to bring them to the notice of members of the public. The institute already makes a special appeal to those whose wealth has been drawn directly or indirectly from the gold or diamond mines of South Africa, but having regard to the basis of its establishment it may fairly be said to deserve the support of all. There is no intention of confining its work to industrial or topical diseases; all matters concerning the health of the inhabitants of South Africa will come within its scope. It is hoped, moreover, that, with the general advancement of scientific and technical education in South Africa, facilities may be afforded for teaching modern developments of pathology and bacteriology in association with the work of research. Research will be kept in the foreground as the proper work of the institute, but that the teaching side has not been forgotten is indicated by the provision of a lecture theatre, which is also to be available for meetings of the local medical profession. It is hoped consequently that men of

South African Institute for Medical Research.

wealth and liberal minds will endow research fellowships in particular subjects so as to insure a continuous contribution to the study of human disease.

The enterprise is being administered by a joint committee consisting of Government nominees and leading representatives of the mining industry, under the chairmanship of Mr. P. Ross Frames, the managing director of the Premier Diamond Mining Company.

The institute's buildings embody the latest ideas in medical research, and include five wards for the reception of patients. In these wards, which will be nursed from the adjoining Johannesburg General Hospital, the phenomena of disease will be recorded under laboratory conditions and the best methods of treatment ascertained by close observation and comparison.

The Government and the mining administration of South Africa are to be congratulated upon their enlightened enterprise, an enterprise which should not be permitted to languish for want of financial support. The prosecution of medical research is one of the high functions of man, a manifestation of that spirit of humanism which will bear sway when barbaric militarism has disappeared from among the civilised peoples: the moment when South Africa is proving in a very patriotic and practical way her willingness to bear her part in an imperial war on behalf of peace would be a very fitting one to place the South African Institute for Medical Research on a firm financial footing.

PRISONS COMMISSIONERS' REPORT.

THE report of the Commissioners of Prisons and the Directors of Convict Prisons for the year ended March 31st, 1914, has been presented to both Houses of Parliament by command of His Majesty. It is signed by Sir Evelyn Ruggles-Brise, K.C.B. (chairman), Mr. F. J. Dryhurst, C.B., Captain C. F. de L. Eardley-Wilmot, Mr. M. L. Waller, and Sir Herbert Smalley, M.D.

Statistics as to Local and Convict Prisons.

The report states that the daily average population in local prisons was 14.352, in convict prisons 2704, in Borstal institutions 928, in State inebriate reformatories 81, and in private detention prisons 171. As compared with the previous year these figures show a decrease of 1182 in local prisons and 172 in convict prisons. The receptions into prisons during the year numbered 128,686 on summary conviction and 7738 on conviction on indictment—total 136,424. The death-rate in local prisons from natural causes was 0·55 per 1000 prisoners received, the average for the previous 25 years being 0·50 per 1000. The death-rate from natural causes in convict prisons was 7·4 per 1000 of the daily average population, as compared with 3·9 in the preceding year and 6·3 for the past ten years. The number of persons in local prisons found to be insane and certified as such after reception was 140, as compared with 135 last year; and in convict prisons 44, as compared with 48. Of the 140 cases certified in local prisons 100 were found to be insane on reception, and 8 exhibited symptoms of insanity within a month of reception. Many of those who were in prison for some time before the usual symptoms of insanity were observed were known to be of weak intellect or mentally impaired on reception, or to have been previously insane. The number of prisoners who were released from local prisons on medical grounds (exclusive of pregnancy, &c.) was 38, and from convict prisons 2. There were 11 suicides in local prisons during the year and 1 in convict prisons. The number of prisoners formally recognised as being so feeble-minded as to be unfit for the ordinary penal discipline was 843 in local prisons and in convict prisons 108. It is hoped that the passing of the Mental Deficiency Act, which came into operation on April 1st, 1914, will, as soon as the necessary operations can be made by the newly created Board of Control, relieve the prison authority of a great burden and responsibility in dealing with these cases. It is estimated that about 70 per cent. of such cases will satisfy the definition of the Act and will henceforth pass under the control of the body specially appointed to assign the proper treatment necessary in each individual case.

The majority of our prisons are now (the report proceeds) equipped with special cells for prisoners suffering from tuberculous disease. It is satisfactory to note that at Birmingham Prison, where 26 (25 male and 1 female) prisoners were found to be suffering from phthisis on reception, all showed some improvement during their imprisonment in the suitable environment provided, and medical officers generally report favourably on the facilities now given for the special treatment of tuberculous disease.

Habitual Inebriates—Anthropological Investigation.

With regard to the habitual inebriate under State control, of both sexes, it appears from the report of the inspector, Dr. R. W. Branthwaite, that the population at both institutions—Warwick and Aylesbury—for males and females respectively is rapidly decreasing, the daily number under detention at the former being only 19 and that at the latter only 62. Dr. Branthwaite says that "unless some effort is made to secure the passage into law of a consolidating and amending Bill this excellent attempt to institute more rational methods for dealing with habitual inebriates, at any rate with those who haunt our courts and prisons, is doomed to failure." If, as stated in the report, there are sufficient indications to justify the belief that a measure of mental defect exists, in many cases, from birth or early age, it may reasonably be anticipated that in course of time, when the Mental Deficiency Act is in full operation, such cases will have been eliminated, having been certified as mental defects.

Referring to the publication in August last of Dr. C. Goring's report, recording the results of his anthropological investigation in convict prisons, the Commissioners remark that whatever reception is given to the various conclusions arrived at there can be no doubt that the anthropological data, presented in a series of tables, are of great scientific value. "This praiseworthy work is an attempt to present an outline of conclusions reached by the application of the statistical method to the data furnished by inquiry as to the physical and mental condition of convicts in English prisons. Close mathematical analysis of these data, within the admitted limits of the inquiry pursued with remarkable patience and ability, points to the conclusion that there is not any significant relationship between crime and what are popularly believed to be its 'causes'—inherited stigma, poverty, neglect, illiteracy, &c. In other words, there are no physical, mental, or moral characteristics peculiar to the inmates of English prisons. What Dr. Goring insists upon is that conviction of crime is associated with constitutional rather than circumstantial conditions, and, as these are heritable, the genesis of crime must to this extent be influenced by heredity; and the criminal diathesis, revealed by the tendency to crime, is affected by heredity to much the same extent as other physical and mental conditions in man; but this does not mean that a man is predestined to a criminal career by a tendency which he is unable to control. It only means that heritable constitutional conditions have hitherto prevailed in the making of criminals; which is to say, that variation of environment within the restricted limits examined (from the education of the streets to that of public elementary school, reformatory school, &c., for instance) has not been sufficient, in the long run, to counteract or mask the force of inherited proclivity, which nevertheless is itself a force of varying intensity, and one which can be regulated, encouraged, or stultified by training and education and example."

Constitution of the Commission.

The following reference is made to the recent change in the constitution of the Commission by the appointment of Sir Herbert Smalley to be a member of the board: "The growing importance of the medical side of prison administration, the numberless questions that continually arise demanding medical knowledge and experience, led the Secretary of State to the opinion that there should be a strengthening of this Commission by the addition of a medical authority of long and wide experience, and one who, as medical inspector for many years, had become conversant with all questions affecting the mental and physical state of prisoners. Sir H. Smalley now takes his place on the Prisons Board, and will be relieved to a large extent of the duties of general inspection which he has hitherto discharged by the appointment of Mr. O. F. N. Treadwell, formerly medical officer of Parkhurst Prison, to be Assistant Medical Inspector of Prisons."

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Lieutenants are confirmed in their rank:—Ernest W. Wade, Bernard Woodhouse, William K. Morrison, Edgar Percival, Stanley J. Linzell, and Lewis R. Shore.

The undermentioned to be temporary Lieutenants:—Dated Oct. 5th: Edmund Rupert Dermer, Godfrey Martin Huggins, Charles Matheson Kennedy, Charles Dudley Roberts, James Heslop Aikman, Delvine Bell, Edwin Brace Barton, John Smith Knox Boyd, Douglas Morris Borland, Dudley Thomas Birt, Alan Willis Gaye, William Sim Garden, John Hugh Cuthbert Green, Aubrey Goodwin, Stanley Honeyman, Alfred Ernest Hallinan, Thomas Hugh Houston, Robert McCowan Hill, William Christopher Jardine, Courtnay Cooper Keates, James William Littlejohn, David Matthew, William Stretley Martin, Daniel McVicker, Henry Maurice MacKenzie, Fred Wallace Mackenzie, John Tertius Morrison, Hugh London Neil, Ralph Stransham Oldham, William Berwick Ure Patterson, George Rankine, John Symington Stewart, William Robertson Snodgrass, James John Sinclair, Neil Frederick Sinclair, James Taylor, James Herbert Grove-White, and Donald Wainwright.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.

Lieutenant Philip S. Vickerman is granted seniority as from April 8th.

ROYAL NAVAL VOLUNTEER RESERVE.

A temporary commission has been issued to J. Westwood [illegible] Surgeon.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants to be Captains: Paul B. Roth, Laurence M. Routh, James O. Hamilton, Charles A. Bignold, Keith B. MacGlashan, John Adams, Leonard W. O. Taylor, James B. Williamson, Claude Johnson, Gilbert K. Aubrey, Henry H. Brown, and John Fraser.

The undermentioned Lieutenants are confirmed in their rank:—Francis R. H. Mollan and James O'Brien.

The undermentioned Cadets of the Officers Training Corps to be Lieutenants (on probation): Frederick John Henry Tobias Frere and Roderic Duncan Cameron.

The undermentioned to be Lieutenants (on probation): Colin Grant, Lionel Arthur Lewis, and Neale Leo Lochrane.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st East Anglian Field Ambulance: George James Leask to be Quartermaster, with the honorary rank of Lieutenant. Harry Harris to be Transport Officer, with the honorary rank of Lieutenant.

3rd East Anglian Field Ambulance: Frederick Claude Kempson to be Lieutenant.

1st Highland Field Ambulance: The undermentioned to be Lieutenants: Charles Alexander Whyte and George Davidson. James Dickie to be Quartermaster, with the honorary rank of Lieutenant.

3rd Highland Field Ambulance: John Morrison Milne to be Lieutenant.

1st Home Counties Field Ambulance: William Brooks Keith to be Lieutenant.

1st West Lancashire Field Ambulance: The undermentioned Captains to be Majors: Creighton H. Lindsay and Adam P. H. Simpson.

3rd West Lancashire Field Ambulance: The undermentioned Captains to be Majors: Augustus A. W. Merrick and Richard Coffey.

1st Northumbrian Field Ambulance: Roger Errington to be Lieutenant.

2nd Northumbrian Field Ambulance: Major Duncan Alexander Cameron to be Lieutenant-Colonel. Captain Duncan Vercoe Haig and Captain David Leonard Fisher to be Majors. Valentine Hutchinson Wardle (late Cadet, Durham University Contingent, Senior Division, Officers Training Corps) to be Lieutenant. Angus Ferens to be Transport Officer, with the honorary rank of Lieutenant.

1st London (City of London) General Hospital: Arnold Walmsley Stott to be Lieutenant. The undermentioned to be Lieutenants (dated Sept. 5th): Alfred Bernard Pavey Smith, Lionel Gordon Crossman, and Martin Wright Kidman Bird.

2nd London General Hospital: The undermentioned to be Lieutenants: Cyril Eaton Petley, Leonard Milton, Herbert Sharpe, and Hubert John Burgess Fry.

3rd London General Hospital: The undermentioned to be Lieutenants: George Harvey Duder Webb, John St. Andrew Titmas, Harry Audley Lucas, and Edward Smeed.

4th London General Hospital: Major Stanley Boyd to be Lieutenant-Colonel.

5th Southern General Hospital: The announcement notifying the resignations of Lieutenant-Colonel and Honorary Surgeon-Colonel George G. Sparrow and Lieutenant-Colonel John R. S. Robertson is cancelled.

South Wales Mounted Brigade Field Ambulance: The undermentioned to be Lieutenants: Guy Starkey Thompson, Archibald John Campbell, and Ernest Littleton Sandiland.

3rd Welsh Field Ambulance: William Jones Richards to be Lieutenant.

3rd Wessex Field Ambulance: Captain Elliott B. Bird to be Major.

2nd Eastern General Hospital: Major James A. Rooth to be Lieutenant-Colonel. Lieutenant Hugh M. Galt, from Attached to Units other than Medical Units, to be Captain.

Supernumerary for Service with the Officers Training Corps: Andrew Daniel Clinch to be Lieutenant, for service with the Dublin University Contingent, Senior Division, Officers Training Corps.

Attached to Units other than Medical Units.—Major William Kirman Pauli, from the Territorial Force Reserve, to be Major. Major Herman Stedman resigns his commission, and is granted permission to retain his rank and wear the prescribed uniform. Captain Charles Arthur Morris, C.V.O., to be Major. Supernumerary Captain Matthew B. Ray is absorbed into the establishment. Lieutenant Angus McNab and Lieutenant Alan C. Ransford to be Captains. Thomas Vicars Oldham, James Gerald Fayrer Hosken, and Edward Lister Martin to be Lieutenants. Lieutenant Norman M. Fergusson to be Captain. Lieutenant Robert W. Simpson to be Captain. John Forbes Ward to be Lieutenant. John James Scanlan (late Surgeon-Captain 35th Imperial Yeomanry) to be Lieutenant.

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on Oct. 13th, Surgeon-General Sir Arthur W. May, K.C.B., in the chair, the sum of £40 was distributed among the several applicants.

DEATHS IN THE SERVICES.

Lieutenant-Colonel Herbert Wilson Pilgrim, recently, at Brighton, aged 56. He joined the Indian Medical Service in 1886, reaching the rank of lieutenant-colonel in 1906. In 1892 he was appointed resident surgeon at the Presidency General Hospital, Calcutta, and in 1898 surgeon-superintendent.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8052 births and 4653 deaths were registered during the week ended Saturday, Oct. 17th. The annual rate of mortality in these towns, which in the three preceding weeks had been 15·7, 14·3, and 13·9 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year, further declined to 13·4 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·2, against a corresponding rate of 13·3 per 1000 in London. Among the several towns the death-rate last week ranged from 5·9 in Ealing, 6·2 in Southend-on-Sea, 6·3 in Ilford, 6·4 in Hornsey, 6·9 in Lincoln, and 7·3 in Walthamstow and in Bolton, to 18·2 in Liverpool and in Wigan, 18·4 in Barnsley, 19·2 in Rotherham, 19·7 in Gateshead, 20·6 in Middlesbrough, and 23·1 in Dewsbury.

The 4653 deaths from all causes were 194 fewer than the number in the previous week, and included 529 which were referred to the principal epidemic diseases, against numbers declining from 1437 to 710 in the four preceding weeks. Of these 529 deaths, 322 resulted from infantile diarrhœal diseases, 67 from measles, 59 from diphtheria, 38 from whooping-cough, 29 from scarlet fever, and 14 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·5, against 2·0 per 1000 in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had declined from 1223 to 485 in the four preceding weeks, further fell to 322, and included 91 in London, 32 in Liverpool, 19 in Birmingham, 14 in Manchester, and 7 in Middlesbrough. The deaths referred to measles, which had been 50, 61, and 73 in the three preceding weeks, fell to 67 last week, of which 21 were registered in London, 9 in Liverpool, 6 in Birkenhead, 5 in Birmingham, and 3 each in Manchester, Wigan, and Oldham. The fatal cases of diphtheria, which had been 56, 63, and 57 in the three preceding weeks, were 59 last week, of which 16 occurred in London, 5 in Birmingham, 4 in Portsmouth, and 3 in Manchester. The deaths attributed to whooping-cough, which had been 40, 50, and 47 in the three preceding weeks, further declined to 38 last week, and included 13 in London, 3 in Rhondda, and 2 in Acton. The deaths referred to scarlet fever, which had been 23, 29, and 31 in the three preceding weeks, fell to 29 last week, of which 6 were recorded in London, 3 each in Manchester and Newcastle on-Tyne, and 2 each in Southampton, Salford, and Sheffield. The fatal cases of enteric fever, which had been 16, 23, and 17 in the three preceding weeks, fell to 14 last week, of which 2 each occurred in London and Liverpool.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 3071 to 4363 in the eight preceding weeks, had further risen to 4473 on Saturday last; 650 new cases were admitted during the week, against 674, 640, and 670 in the three preceding weeks. These hospitals also contained on Saturday last 1443 cases of diphtheria, 71 of enteric fever, 34 of whooping-cough, and 30 of measles, but not one of small-pox. The 1205 deaths from all causes in London were 13 in excess of the number in the previous week, and corresponded to an annual rate of 13·9 per 1000. The deaths referred to diseases of the respiratory system, which had increased from 110 to 175 in the four preceding weeks, further rose to 178 in the week under notice, and were 2 above the number in the corresponding week of last year.

Of the 4653 deaths from all causes in the 97 towns, 182 resulted from various forms of violence, and 357 were the subject of coroners' inquests, while 1424 occurred in public institutions. The causes of 26, or 0·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Leeds, Bristol, Hull, Newcastle-on-Tyne, and in 58 other smaller towns. Of the 26 uncertified causes of death, 5 were registered in Birmingham, 3 in Gateshead, and 2 in Smethwick.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1128 births and 646 deaths were registered during the week ended Saturday, Oct. 17th. The annual rate of mortality in these towns, which had been 16·3, 15·6, and 15·9 per 1000 in the three preceding weeks, declined to 14·7 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 14·4, against 13·2 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 4·1 in Hamilton, 8·5 in Coatbridge, and 8·8 in Kilmarnock, to 15·3 in Glasgow, 16·9 in Edinburgh and in Dundee, and 18·7 in Greenock.

The 646 deaths from all causes were 52 fewer than the number in the previous week, and included 81 which were referred to the principal epidemic diseases, against 92 and 96 in the two preceding weeks. Of these 81 deaths, 29 resulted from infantile diarrhœal diseases, 19 from diphtheria, 16 from scarlet fever, 10 from whooping-cough, 6 from enteric fever, and 1 from measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·8, against 1·5 per 1000 in the 97 English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 87, 52, and 54 in the three preceding weeks, declined to 29, of which 13 were registered in Glasgow and 3 each in Edinburgh, Dundee, and Paisley. The deaths referred to diphtheria, which had increased from 4 to 14 in the four preceding weeks, further rose to 19 last week, and comprised 8 in Edinburgh, 5 in Glasgow, 5 in Aberdeen, and 1 in Leith. The fatal cases of scarlet fever, which had been 12, 12, and 13 in the three preceding weeks, rose to 16 last week, and included 9 in Glasgow, 3 in Paisley, 2 in Edinburgh, and 2 in Aberdeen. The deaths attributed to whooping-cough, which had been 13, 13, and 8 in the three preceding weeks, rose to 10 last week, of which 8 were recorded in Glasgow. The deaths referred to enteric fever, which had been 4, 4, and 6 in the three preceding weeks, were again 6 last week, and comprised 4 in Glasgow and 2 in Edinburgh. The fatal case of measles occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had increased from 62 to 84 in the four preceding weeks, further rose to 89 in the week under notice; 29 deaths resulted from different forms of violence, against 27 and 28 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 546 births and 375 deaths were registered during the week ended Saturday, Oct. 17th. The annual rate of mortality in these towns, which had declined from 19·9 to 15·4 per 1000 in the four preceding weeks, rose to 16·2 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 16·9, against corresponding rates of 13·2 and 14·4 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 17·0 in Dublin (against 13·9 in London and 15·3 in Glasgow), 17·3 in Belfast, 19·0 in Cork, 10·1 in Londonderry, 17·6 in Limerick, and 17·1 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 12·8 per 1000.

The 375 deaths from all causes were 20 in excess of the number in the previous week, and included 57 which were referred to the principal epidemic diseases, against 53 in each of the two preceding weeks. Of these 57 deaths, 33 resulted from infantile diarrhœal diseases, 7 from measles, 7 from scarlet fever, 4 from diphtheria, 3 from whooping-cough, and 3 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·5, against corresponding rates of 1·5 and 1·8 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had declined from 74 to 34 in the four preceding weeks, were 33 last week, of which 12 were recorded in Belfast, 10 in Dublin, 5 in Cork, and 3 in Limerick. The 7 deaths referred to measles were registered in Belfast, and were 3 in excess of the average in the four preceding weeks. The fatal cases of scarlet fever, which had been 2, 2, and 4 in the three preceding weeks, further rose to 7 last week, and included 3 in Belfast and 2 in Waterford. The 4 deaths attributed to diphtheria, of which 2 occurred in Dublin, were double the average in the four preceding weeks. The 3 fatal cases of enteric fever were registered in Dublin, and those of whooping-cough in Belfast.

The deaths referred to diseases of the respiratory system, which had been 56, 58, and 56 in the three preceding weeks, rose to 71 in the week under notice. Of the 375 deaths from all causes, 102, or 27 per cent., occurred in public institutions, and 5 resulted from different forms of violence. The causes of 8, or 2·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 English towns the proportion of uncertified causes of death last week did not exceed 0·6 per cent.

VITAL STATISTICS OF LONDON DURING SEPTEMBER, 1914.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 11·6 per 1000 of the population, estimated at 4,516,612 persons in the middle of the year; in the three preceding months the rates were 7·6, 7·8, and 7·5 per 1000 respectively. The lowest rates last month were recorded in Chelsea, St. Marylebone, Hampstead, Hackney, Holborn, and Wandsworth; and the highest rates in Fulham, Islington, Bethnal Green, Stepney, Poplar, and Deptford. Scarlet fever was much more prevalent than it had been in any preceding month of this year; the greatest proportional prevalence of this disease last month was recorded in Hammersmith, Islington, Stoke Newington, the City of London, Bethnal Green, and Stepney. The Metropolitan Asylums Hospitals contained 4157 scarlet fever patients at the end of last month, against 3045, 3113, and 3199 at the end of the three preceding months; the weekly admissions averaged 598, against 396, 410, and 414 in the three preceding months. Diphtheria also was excessively prevalent as compared with other recent months; this disease was proportionally most prevalent last month in Bethnal Green, Stepney, Poplar, Deptford, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1080, 1042, and 1030 at the end of the three preceding months, had risen again to 1296; the weekly admissions averaged 188, against 131 and 128 in the two preceding months. Enteric fever was proportionally more prevalent than it had been in any month since February; among the several metropolitan boroughs this disease was proportionally most prevalent in Chelsea, the City of Westminster, St. Marylebone, Holborn, Greenwich, and Woolwich. There were 57 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 40, 36, and 39 at the end of the three preceding months; the weekly admissions averaged 11, against 8, 6, and 7 in the three preceding months. Erysipelas was proportionally most prevalent in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Bermondsey, Deptford, and Greenwich. The 41 cases of puerperal fever notified during the month included 5 in Islington, 4 in Fulham, 3 in St. Pancras, 3 in Southwark, and 3 in Camberwell. The 10 cases of cerebro-spinal meningitis included 2 in Islington and 2 in Stepney; and the 31 cases of poliomyelitis included 12 in Stepney, 5 in Poplar, 3 in Hackney, and 2 each in Southwark, Lambeth, and Camberwell.

The mortality statistics relate to the deaths of persons

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING SEPTEMBER, 1914.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON...	**4,516,612**	—	**3259**	**1049**	—	[illegible]	**2**	**41**	**538**	**10**	**31**	**5018**	**11·6**	—	**115**	**36**	**72**	**79**	**15**	**1342**	**1659**	**3·8**	**6703**	**15·5**
West Districts.																								
Paddington	142,055	—	90	37	—	1	—	2	10	—	1	141	10·4	—	1	—	—	6	1	31	39	2·9	183	13·3
Kensington	170,817	—	138	17	—	4	—	1	20	—	—	180	11·0	—	2	3	—	1	—	22	28	1·7	229	13·9
Hammersmith	124,750	—	106	18	—	1	—	—	13	—	—	138	11·5	—	2	1	—	2	—	29	34	2·8	150	12·4
Fulham	158,849	—	128	34	—	4	1	4	12	1	—	184	12·1	—	—	4	2	3	—	56	65	4·3	222	15·1
Chelsea	63,791	—	31	5	—	5	—	1	6	—	—	48	7·8	—	—	2	1	—	—	9	12	2·0	83	12·9
City of Westminster	152,346	—	114	31	—	5	—	1	18	—	—	169	11·6	—	—	2	1	1	—	12	16	1·1	161	11·6
North Districts.																								
St. Marylebone	112,892	—	46	28	—	4	—	—	9	—	—	87	8·0	—	1	1	1	1	—	17	21	1·9	145	13·7
Hampstead	86,731	—	35	20	—	1	—	1	3	—	—	60	7·2	—	—	—	2	—	—	3	5	0·6	76	9·6
St. Pancras	212,497	—	131	48	—	2	—	3	22	—	1	207	10·2	—	7	2	5	1	1	41	57	2·8	318	15·6
Islington	324,764	—	291	79	—	4	—	5	43	2	1	425	13·6	—	15	1	5	7	1	102	131	4·2	519	16·3
Stoke Newington	50,454	—	46	6	—	—	—	—	3	—	—	55	11·4	—	—	—	—	1	—	9	10	2·1	70	13·8
Hackney	223,724	—	109	40	—	6	—	1	27	1	3	187	8·7	—	4	2	5	5	1	43	60	2·8	295	13·9
Central Districts.																								
Holborn	45,861	—	16	12	—	4	—	1	3	—	—	36	8·2	—	1	—	—	—	—	9	10	2·3	75	17·2
Finsbury	83,212	—	69	11	—	—	—	1	13	1	—	95	11·9	—	9	—	—	3	—	41	53	6·6	177	21·9
City of London	17,129	—	15	1	—	—	—	—	2	—	—	18	11·0	—	—	—	—	—	—	—	—	—	19	12·1
East Districts.																								
Shoreditch	108,869	—	56	23	—	3	—	1	19	—	—	102	9·8	—	11	—	—	4	1	55	71	6·8	261	25·8
Bethnal Green	127,662	—	114	57	—	4	—	2	25	1	1	204	16·7	—	6	—	1	3	1	72	83	6·8	226	19·2
Stepney	273,265	—	375	134	—	7	—	1	56	2	12	587	22·4	—	16	6	5	7	2	117	153	5·8	478	19·0
Poplar	160,222	—	103	58	—	4	—	2	24	1	5	197	12·8	—	6	—	4	2	2	81	95	6·2	325	21·0
South Districts.																								
Southwark	186,941	—	143	33	—	3	—	3	25	—	2	209	11·7	—	16	1	3	5	—	95	120	6·7	368	20·6
Bermondsey	124,213	—	64	22	—	1	—	1	25	—	—	113	9·5	—	1	—	3	—	—	74	78	6·5	239	20·1
Lambeth	296,724	—	217	70	—	5	1	1	27	—	2	323	11·4	—	1	3	13	3	1	97	118	4·1	459	15·8
Battersea	167,338	—	138	17	—	4	—	2	15	—	—	176	11·0	—	7	1	1	4	1	57	71	4·4	222	13·9
Wandsworth	338,998	—	153	76	—	3	—	1	25	—	—	258	7·9	—	3	1	6	8	1	63	82	2·5	380	11·8
Camberwell	262,020	—	182	44	—	2	—	3	29	—	2	262	10·4	—	4	2	4	10	—	75	95	3·8	373	14·6
Deptford	109,182	—	91	30	—	—	—	1	27	—	—	149	14·2	—	—	1	3	—	1	51	56	5·3	168	15·8
Greenwich	96,037	—	60	24	—	4	—	1	15	1	—	105	11·4	—	1	—	2	1	—	31	35	3·8	154	16·4
Lewisham	172,433	—	108	39	—	3	—	1	12	—	1	164	9·9	—	—	2	1	1	1	34	39	2·4	165	9·8
Woolwich	122,836	—	90	35	—	4	—	—	10	—	—	139	11·8	—	1	1	4	—	—	16	22	1·9	163	14·1
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the population of the several boroughs. During the five weeks ending Oct. 3rd the deaths of 6703 London residents were registered, equal to an annual rate of 15·5 per 1000; in the three preceding months the rates had been 12·6, 11·3, and 12·6 per 1000 respectively. The death-rates last month ranged from 9·6 in Hampstead, 9·8 in Lewisham, 11·6 in the City of Westminster, 11·8 in Wandsworth, 12·1 in the City of London, and 12·4 in Hammersmith, to 19·0 in Stepney, 19·2 in Bethnal Green, 20·1 in Bermondsey, 20·6 in Southwark, 21·0 in Poplar, 21·9 in Finsbury, and 25·8 in Shoreditch. The 6703 deaths from all causes included 1659 which were referred to the principal infectious diseases; of these, 115 resulted from measles, 36 from scarlet fever, 72 from diphtheria, 79 from whooping-cough, 15 from enteric fever, and 1342 from diarrhœa and enteritis among children under 2 years of age. No death from any of these diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Kensington, the City of Westminster, St. Marylebone, Hampstead, and Woolwich; and the highest rates in Finsbury, Shoreditch, Bethnal Green, Poplar, Southwark, and Bermondsey. The 115 fatal cases of measles were 59 in excess of the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal last month in Islington, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Battersea. The 36 cases of scarlet fever were 20 above the average number; the greatest proportional mortality from this disease was recorded in Kensington, Fulham, Chelsea, Stepney, and Lambeth. The 72 deaths from diphtheria exceeded the average by 29, the greatest proportional mortality being recorded in St. Pancras, Hackney, Poplar, Bermondsey, Lambeth, Deptford, and Woolwich. The 79 fatal cases of whooping-cough were 15 above the corrected average number; this disease was proportionally most fatal in Paddington, Finsbury, Shoreditch, Stepney, Southwark, and Camberwell. The 15 deaths from enteric fever were 4 below the corrected average, and included 2 in Stepney and 2 in Poplar. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, and Deptford. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases, excluding diarrhœa, was 60·1 per cent. above the average.

DONATIONS AND BEQUESTS.—By will the late Miss Margaret Harker Smith, of Holmbrook, Tunbridge Wells, Kent, has left £10,000 to the Homœopathic Hospital, Tunbridge Wells, £6000 to the University College Hospital for the Cancer Research Fund, and £5000 to the New Hospital for Women, London.—The late Mr. John Sykes, of Huddersfield, has bequeathed £2000 to the Huddersfield Royal Infirmary.—The Leicester Infirmary will receive £500 under a bequest of the late Mr. Alfred Green.

A POINT AS TO MILK ADULTERATION.—In Scotland Sheriff Shennan gave judgment recently at Hamilton on a point arising out of milk adulteration. It was proved by the evidence of inspectors who were eye-witnesses that some new milk was in fact adulterated by being poured into cans in which a certain quantity of skimmed milk had already been placed. The milk thus mixed was then purchased by the inspectors as a sample of "sweet milk" from the dealer on whose premises the mixing took place. For the defence it was contended that as the admixture of skimmed milk had not lowered the proportion of milk fat in the article as sold below the 3 per cent. standard fixed as a minimum by the Board of Agriculture there was no offence, and that as the inspectors had seen the mixing take place they had notice of it. Sheriff Shennan convicted the dealer, holding that to diminish the proportion of milk fat in the milk by 15 per cent. was to affect the milk injuriously and injure the purchaser, and that the Food and Drugs Act was not meant to legalise the thinning down of rich milk to the minimum. The purchaser was entitled to notice if any such alteration took place, and the fact that the inspectors knew of it did not absolve the seller from the duty to give such notice. He inflicted a fine of £5.

Correspondence.

"Audi alteram partem."

THE NURSING OF THE WOUNDED.

To the Editor of THE LANCET.

SIR,—It has been brought to the notice of the committee of the British Red Cross Society that doctors in various parts of the country are complaining that wounded soldiers are, as they allege, being nursed by members of Voluntary Aid Detachments, who are not fully trained and certificated nurses.

On behalf of this society I desire to point out that no offer of hospital accommodation which has been submitted to us, and has been approved of by the military authorities, is ever accepted unless fully trained and certificated nurses are in charge. In these hospitals the services of Voluntary Aid Detachments are utilised as probationers, cooks, and in other general ways.

If hospitals are started and utilised by the military authorities without reference to this society the doctor who is asked to take medical charge should, if he finds lack of skilled nurses, apply to the authority responsible for starting such a hospital.

I may mention that we have upon our books the names of some 1500 trained and fully certificated nurses whose services could be called upon at any time in case of need and without expense to the hospitals for which they are required.

I am, Sir, yours faithfully,
ARTHUR STANLEY,
Chairman of the Executive Committee.
83, Pall Mall, London, S.W., Oct. 19th, 1914.

THE MEDICAL REGISTER.

To the Editor of THE LANCET.

SIR,—May I once more ask you for your valuable assistance in reminding members of the profession that unless their names appear in the Medical Register they are not "legally qualified medical practitioners" (Medical Act, 1858, Section 34), and that the duty of notifying changes of address rests with them.

> No person can "hold any appointment as a physician, surgeon, or other medical officer either in the military or naval service or in emigrant or other vessels, or in any hospital, infirmary, dispensary, or lying-in hospital, not supported wholly by voluntary contributions, or in any lunatic asylum, gaol, penitentiary, house of correction, house of industry, parochial or union workhouse or poor-house, parish union, or other public establishment, body, or institution, or to any friendly or other society for affording mutual relief in sickness, infirmity, or old age, or as a medical officer of health, unless he be registered" (Section 36); and "no certificate required by any Act now in force, or that may hereafter be passed, from any physician, surgeon, licentiate in medicine and surgery, or other medical practitioner, shall be valid unless the person signing the same be registered" (Section 37).

The Medical Register is the only official publication, and should not be confused with any of the various directories which issue circulars annually.

No one who is not familiar with the work of this office would believe the amount of trouble which is taken to keep in touch with practitioners, and to find them when touch has been lost; but unless we are assisted by members of the profession ourselves our efforts are often fruitless. In consequence of cases which have recently occurred it becomes increasingly important every year that the registrar should carry out the duty laid upon him under Section 14 of removing from the Register the names of practitioners with whom he cannot communicate. It is done with reluctance, but only by this means can the public and the profession be protected against impostors. No doubt cases of hardship do sometimes arise in consequence of this removal of names, but every possible source of information is made use of to save practitioners from the results of their own forgetfulness, and if they are inconvenienced by finding that their names are off the Register the blame does not rest with this office.

Perhaps I may add that by a recent regulation practitioners possessing medical and dental qualifications, if already on the Medical Register, may register in the Dentists Register (or *vice versâ*) for a reduced fee of £2 1*s*. instead of £5 1*s*. I should also like to take the opportunity of drawing attention to the following resolution adopted by the Council on Nov. 30th, 1911, and re-drafted on June 1st, 1914. It cannot be too strongly urged upon practitioners that in giving certificates they are recognised by law as members of a trusted profession, and that it behoves them to exercise the greatest possible care in the matter:—

CERTIFICATES, NOTIFICATIONS, REPORTS, ETC.

Registered practitioners are in certain cases bound by law to give, or may be from time to time called upon or requested to give, certificates, notifications, reports, and other documents of a kindred character, signed by them in their professional capacity, for subsequent use either in Courts of Justice or for administrative purposes. Such documents include, among others, certificates, notifications, reports, &c.: (*a*) Under the Statutes relating to births, deaths, or disposal of the dead; (*b*) under the Acts relating to lunacy and mental deficiency and the rules made thereunder; (*c*) under the Vaccination Acts and the Local Government Board Orders made thereunder; (*d*) under the Factory Acts and the Home Office Regulations made thereunder; (*e*) under the Education Acts; (*f*) under the Public Health Acts and the Local Government Board Orders made thereunder; (*g*) under the Workmen's Compensation Acts; (*h*) under the Acts and the Local Government Board Orders relating to the notification of infectious diseases; (*i*) under the National Insurance Acts and the regulations made thereunder; (*j*) under the Old Age Pensions Acts and the Treasury Regulations made thereunder; (*k*) under the Merchant Shipping Acts; (*l*) in connexion with sick benefit, insurance, and Friendly Societies; (*m*) for procuring the issue of Foreign Office passports; (*n*) for excusing attendance in courts of justice, in the public services, in public offices, or in ordinary employments; (*o*) in connexion with naval and military matters.

Any registered practitioner who shall be shown to have signed or given under his name and authority any such certificate, notification, report, or document of a kindred character, which is untrue, misleading, or improper, *whether relating to the several matters above specified or otherwise*, is liable to have his name erased from the Register.

I am, Sir, yours faithfully,
A. J. COCKINGTON,
Acting Registrar.
General Council of Medical Education and Registration of the United Kingdom, Oxford-street, London, W., Oct. 15th, 1914.

MULTIPLE ROUND-CELLED SARCOMA.

To the Editor of THE LANCET.

SIR,—Will you allow me to draw the attention of your readers to the case of multiple round-celled sarcoma, so clearly reported by Mr. C. N. Slaney, of Parkhurst Convict Prison, in to-day's issue of THE LANCET. I had opportunities of seeing the patient several times with Mr. Slaney and with Mr. O. F. N. Treadwell (then senior medical officer at the prison), and, deeming the case to be of very exceptional interest and rarity, I subsequently showed Mr. Slaney's notes of the clinical history and the necropsy to some expert pathologists, including Dr. R. G. Hebb, who considered them of importance as demonstrating a very rare example of this particular form of growth. I am informed that specimens from the case, which at Mr. Treadwell's request were kindly examined by Mr. Shattock and Mr. Dudgeon, will be preserved in the museum of St. Thomas's Hospital.

I am, Sir, yours faithfully,
London, Oct. 17th, 1914.   H. BRYAN DONKIN.

IMPERFECTIONS IN THE CUMBERLAND INFIRMARY.

To the Editor of THE LANCET.

SIR,—Mr. H. A. Lediard's letter in THE LANCET of Oct. 17th carries this matter no further. My report is one of some hundreds which are to be republished collectively, and each faithfully records the condition of each hospital as I found it when compared with the standard of an up-to-date modern hospital.

The letter contains innuendoes which relate to matters of which I am without information, and so an apology is called for to myself. Also certain statements which exhibit a surprising disregard of official facts open to the governors—to wit, the annual report for 1914 states on a slip attached to its cover that "there is accommodation for 150 in-patients." 140 of these beds were reported to be available. I was informed that the small room provided for the laundry-maids was used by 11 not 4 persons as stated by Mr. Lediard. A clinical room is an essential part of the ward unit of every up-to-date hospital where the treatment and medical work are modern and efficient. Every properly organised voluntary hospital has a mortuary chapel or view room so that reverence for the dead and due consideration for the living may always be secured.

Mr. Lediard's letter confirms me in the opinion that an independent inquiry in the form I suggested is desirable if the governors wish the administration and efficiency of the Cumberland Infirmary to be brought to the standard of a modern hospital. Each city has the hospital it deserves. Whether its standard of efficiency is high or low rests with the citizens.

I am, Sir, yours faithfully,
HENRY C. BURDETT.
Porchester-square, W., Oct. 19th, 1914.

THE TREATMENT OF TETANUS.

To the Editor of THE LANCET.

SIR,—Anything which may be of use to our wounded needs no apology; therefore I wish to repeat some remarks I made in the *British Medical Journal* of Nov. 5th, 1910.

In the ordinary way tetanus is such a rare disease that it only occupies a small part of one's thoughts. This is not the case now. Tetanus kills partly by the direct action of the toxin and partly by the exhausting effect of the convulsions. By the trismus, and dread that taking food will bring on a convulsion, starvation is added to the horrors of the disease, and sleep is prevented by the painful muscular contractions. In treating the disease when it is manifest there are therefore the following indications: 1. To prevent further absorption of toxin by the removal of its source as far as possible. 2. To neutralise the toxin present.

3. To relax the muscles and prevent the tetanic spasms so that the patient will escape the exhaustion and be able to take food and to sleep. Consequently he will be spared much suffering and be in the best position to fight the disease. Of the first two indications the necessity for removing every scrap of necrotic tissue or blood clot, the provision of the freest drainage, the great value of the prophylactic dose of antitetanus serum after suspicious wounds, and the necessity for large doses to produce effect when the disease is established, are too well known to need more than passing mention. But the use of chloretone to meet the third indication does not seem as well known as it deserves.

McClintock and Hutchins undertook an experimental study of the various drugs used for this purpose, and were convinced that chloretone was the best and least poisonous substance hitherto employed. Hutchins published six cases treated with chloretone with four recoveries. The only case I have so treated was a severe one; the beneficial effects of the drug were immediate and striking; trismus was almost abolished and convulsions completely prevented, and the patient recovered. These cases seem more than to warrant a further trial of chloretone. The method of using chloretone is as follows: 30 to 40 grains of chloretone in olive oil are given per rectum; in one or two hours there should be an improvement in the muscular symptoms. When the effect passes off the dose is repeated. Our man had an average of 80 grains a day for five days. Chloretone poisoning is by respiratory failure, so this must be looked out for. Its use is in no way to supersede antitoxin or surgical measures, but to act as a very useful ally. I am, Sir, yours faithfully,

Guildford, Oct. 10th, 1914. ERIC W. SHEAF.

IN THE TRAIL OF WAR.

To the Editor of THE LANCET.

SIR,—The Local Government Board has issued a timely warning to medical officers of health as to watching during the period of war for the occurrence of typhus, enteric, and small-pox. (THE LANCET, Oct. 17th, 1914, p. 951.) In a war of long duration, having regard to present conditions in the eastern sphere of operations, to this list, later on, may perhaps be added cholera. In the meantime antityphoid vaccine is being energetically prepared for the troops; but, so far, no information is available to the public that special precautions are being made to have ready a stock of anti-small-pox animal vaccine both for the troops and the civil population (*plus* refugees) in excess of normal demands. Its production requires time and the employment of calves within particular age limits, and it might be when small-pox appears bovines generally would not be so readily procurable as at present. It would, therefore, seem reasonable to ice-store a reserve for prompt action.

At the risk of being crushed by the cry of "there is nothing like leather," I suggest that in the favouring of duration of vitality without the aid of ice, meeting conditions of rough transport and of use of variable quantities for scattered groups of men, lanolinated vaccine in collapsible tin tubes is more suitable than either glycerinised or dried vaccine. As an instance of its convenience for rapid work I may state that during a small-pox scare in 1891, at Bangalore, by arranging that the men with already cleansed arms marched past me, with the aid of three assistants to hand sterilised instruments, &c., I vaccinated 1000 British and Indian troops in one day. I am, Sir, yours faithfully,

W. G. KING,
Hatch End, Middlesex, Oct. 14th, 1914. Colonel, I.M.S. (retired).

PREVENTION AND TREATMENT OF CHAFES BY BOOTS.

To the Editor of THE LANCET.

SIR,—For the prevention of sore feet during the march I can strongly recommend from personal experience soaking the uppers of the boots with castor oil and pouring a little of this oil on the feet, especially between the toes, and then putting on thick socks and the soaked boots.

When abrasions appear between the toes, wrapping a small piece of cotton or linen soaked in castor oil round each toe entirely removes the pain of a slight chafe and enables the sufferer to resume his walk with comfort. Ordinary hot drawn engine-room castor oil is just as efficacious as cold drawn for application to the feet and boots, and is of course much cheaper.

The great importance of preventing or mitigating the sufferings from boot chafe at the present time is my sole excuse for trespassing on your valuable space. I am, Sir, yours faithfully,

A. R. S. ANDERSON, M.B. Cantab.,
Dacca, Sept. 16th, 1914. Lieutenant-Colonel, I.M.S.

WANTED, A DIAGNOSIS.

To the Editor of THE LANCET.

SIR,—I should be very grateful if any of your readers could give me any suggestions regarding the nature of the two following cases. Both patients were Wachuka (a native tribe of British East Africa) and fairly intelligent, though, on account of difficulties of language, not easy to examine.

The first, aged about 20 years, was admitted to hospital on March 10th, 1914, having been taken ill the day before. I was not able to ascertain the nature of the first symptoms. When first seen he showed weakness of both legs and was quite unable to stand. There was difficulty in sitting up, owing apparently to weakness of the muscles of the back and abdomen, the iliopsoas, and the glutei. The various groups of muscles in the legs were equally affected and both legs displayed the same loss of power. When lying flat he could raise either leg from the bed and flex and extend the knee- and ankle-joints, but all movements were overcome by slight resistance. All reflexes in the legs, superficial and deep, were lost. There was no loss of power in the arms and none of the muscles supplied by cranial nerves were affected. The abdominal, epigastric, and cremasteric reflexes were absent. In the arms all tendon reflexes were obtained. The palate reflex was present.

Very careful examination failed to reveal any impairment of sensation. The next day the weakness of the legs had increased, and there was considerable loss of power in the arms. The tendon reflexes of the arms were obtained with difficulty.

Hereafter there followed a progressive loss of power in the arms, legs, and trunk, until in four or five days from the onset of the disease the patient was absolutely paralysed save for the facial, orbital, and tongue muscles. The sterno-mastoid and other neck muscles retained some power so that the head could be lifted from the bed, but not against slight resistance. Deglutition was not interfered with. There was slight loss of control of the bladder, the patient occasionally passing urine involuntarily for some days, but in less than a week this ceased and normal control was regained. There was never any incontinence of fæces. With the onset of complete paralysis respiration became entirely diaphragmatic, but with recovery costal respiration gradually returned. At no time during the disease was there any sensory loss, either of light touch, heavy pressure, or heat and cold. The result of the "compass point" test was always normal throughout the disease, and the sense of stereognosis was also unimpaired. At times slight pain was complained of in arms and legs, but it was always of brief duration, and often there was no pain for days together. The pupils remained normally active throughout, and I was unable to detect any change in the fundi oculorum, though lack of a suitable lamp made this examination very difficult. The patient's want of intelligence, or the deficiencies in my knowledge of his language, rendered even a rough charting of his visual fields an impossibility. There has never been any rise of temperature, and the pulse has varied between 75 and 85. For a month or five weeks there was no change in the patient's condition except for the return of power to the sphincter of the bladder within a few days of its loss. Since this time there has been a very slow but steady return of power, most marked in the arms.

The condition on August 1st, 1914, was as follows. The arms are weak, but the patient is perfectly capable of feeding himself and lifting light articles. There is no incoördination, even such fine movements as picking up a pin being rapidly and easily performed. The tendon reflexes in the arms are with difficulty obtainable and are absent in the legs. The neck muscles are slightly weaker than normal, as also are those of the trunk, but there is no difficulty in rising to a sitting posture and in maintaining it. The legs still remain very weak and the patient is quite unable to stand even with support, but either leg can be raised when the patient is lying down, and the knee- and ankle-joints can be weakly flexed and extended. He is able to move about slowly by sitting down and "walking on his hands"—i.e., raising the trunk from the ground and heaving the buttocks forward. What incoördination there is appears to be due to weakness rather than loss of muscle sense. All through the disease there has been very little wasting of the muscles, certainly not more than can be accounted for by disuse. The arms are now as well developed as when the patient was first seen, and the legs are quite well formed.

The second case closely resembles the first, differing only in the more complete recovery. The patient, a native, aged about 14 years, was admitted early in April of this year complaining of general pains which appeared to be rheumatic in nature. Two days after weakness of the limbs became apparent, with loss of reflexes, and in six days from the onset of symptoms there was complete paralysis of all except the facial and orbital muscles and those of mastication and deglutition. His condition exactly resembled that of the first case, except that there was never any loss of sphincter control and more pain was complained of in the limbs. After three weeks of complete paralysis a gradual recovery commenced, and by the middle of June he was able to walk with the aid of a stick. The arms regained power rather more rapidly than the legs. At the present time he can walk well unaided and is able to do light work.

In neither case was there any "blue line" on the gums or any suspicion of the patient having been exposed to lead. Previous to the onset of disease both patients had been engaged in stone-breaking for about two months—i.e., since they left their own country—and their food had been similar to that given to the rest of the native labour, mainly rice, Jugo beans, and various kinds of meal. Meat was rarely eaten, and fresh vegetables never. The only treatment given was the administration of perchloride of mercury and potassium iodide.

I am, Sir, yours faithfully,
E. NORMAN BUTLER,
Medical Officer-in-Charge, Magadi Railway, British East Africa.

THE WAR.

MEDICAL HEADQUARTERS STAFF APPOINTMENTS.

Mr. Fréderic F. Burghard, surgeon to King's College Hospital, has been appointed consulting surgeon to the Forces, and left for France on Wednesday morning to enter upon his new duties.

Sir Wilmot Herringham, Sir John Rose Bradford, and Sir Almroth Wright, whose appointment as consulting physicians to the Forces Overseas was announced in our last issue, left England on Wednesday to take up their duties with the Expeditionary Army in France, where they will hold the rank of Colonel in the Army Medical Service. We understand that Sir John Rose Bradford will be accompanied by Dr. T. R. Elliott, F.R.S., assistant physician to University College Hospital, and Sir Almroth Wright by Dr. Alexander Fleming.

MENTIONED IN DESPATCHES.

The following names of officers in the Royal Army Medical Corps have been brought forward in his recently published despatches by Field-Marshal Sir John French for special mention for services in the field from the beginning of the present campaign up to Oct. 8th:—

General Headquarters Staff.

Cummins, Major S. L.
Woodhouse, Surgeon-General T. P. (temporary).
Birrell, Major E. T. F.
Bourdillon, Lieutenant L. G.
Butler, Major S. G.
Caddell, Captain E. D.
Cowey, Major R. V.
Dolbey, Lieutenant R. V.
Ensor, Major H., D.S.O.
Fielding, Major T. E.
Foster, Major R. L. V.
Grech, Major J.
Goodwin, Major T. H. J. C., D.S.O.
Hairsine, Lieutenant C. (Special Reserve).
Helm, Lieutenant C.
Hinge, Major H. A.
Hopkins, Lieutenant H. L. (Civil Surgeon) (killed).
Howells, Lieutenant W. M.
Huggan, Lieutenant J. L. (killed) (attached 3rd Battalion Coldstream Guards).
Kempthorne, Captain G. A. (attached 1st Battalion Lincolnshire Regiment).
Lathbury, Captain E. B.
Leckie, Captain M. (attached 1st Battalion Northumberland Fusiliers).
Lewis, Captain S. E. (attached 2nd Battalion Royal Irish Rifles).
Lloyd, Major O. W.
McEntire, Captain J. T.
Mitchell, Lieutenant-Colonel L. A.
Morgan, Lieutenant-Colonel J. C.
Murphy, Captain J. F. (Special Reserve).
Nimmo, Captain W. M. (attached 1st Battalion, L. North Lancs Regiment).
O'Brien-Butler, Captain C. P. (attached 5th Lancers).
Osburn, Captain A. C.
Preston, Lieutenant R. A.
Profeit, Major C. W.
Ranken, Captain H. S. (killed) (attached 1st King's Royal Rifle Corps).
Sampson, Captain F. C.
Shields, Lieutenant H. J. S. (attached 1st Battalion Irish Guards).
Stewart, Captain H.
Ware, Captain G. W. W.
Wyler, Lieutenant E. J. (Civil Surgeon).

THE CASUALTY LIST.

The following three medical officers were serving on board H.M.S. *Hawke* when she was torpedoed on Oct. 15th and are officially assumed to have sunk with her: Staff-Surgeon George Charles Cumberland Ross, R.N., Surgeon Gustavus William Musgrave Custance, R.N., and Temporary Surgeon James Digby Watson, R.N.

Among the officers of the Royal Naval Division reported to be interned at Groningen in Holland is Temporary Surgeon B. A. Playne, R.N., who is attached to the 3rd Battalion of the 1st Naval Brigade.

The following names of officers of the Royal Army Medical Corps have appeared in casualty lists since our last issue :—

Missing: Captain A. D. Fraser. Captain W. I. Thompson, previously reported missing, is now officially reported a prisoner of war, and Captain T. B. Moriarty, previously reported missing, has now rejoined.

The name of Captain M. C. Wetherell, R.A.M.C., appears in the list of wounded British officers in Paris hospitals furnished on Oct. 16th by the British Red Cross Society.

In the casualty list from South Africa appear the names of Captain W. F. L. A. Holcroaft and Captain Dalton, of the South African Medical Corps, as wounded and taken prisoner.

GONORRHŒA AMONG THE TROOPS.

Whenever large numbers of young men are gathered together far from their homes it is not unusual that gonorrhœa and other forms of venereal disease should be present. It is therefore not surprising that in several of the newly formed camps of the recently enlisted army a number of cases of gonorrhœa should have appeared. It cannot be said that the recruits in any large quantity may have already been suffering from this disease at the time of enlistment, for each applicant for service is subjected to careful examination before he is accepted. It is impossible that the presence of such a disease as gonorrhœa should escape detection in any bulk, though a certain number whose disorder was in a latent form have been enrolled. It may be taken for granted that in most instances the disease has been acquired in the new environment and under the new conditions of life. The question of what shall be done with these recruits has been embarrassing to the authorities in some places. The new conditions and the new temptations are in great part responsible for the outbreaks of the disease where they have occurred, and often an excessive amount of gratuitous alcohol supplied by enthusiastic admirers is an important factor. It is eminently undesirable to send off to the front the men affected with gonorrhœa until the disease has been cured, for on active service the facilities for the treatment of such a disease as gonorrhœa are not great, while the disabilities of a neglected sufferer may be serious. Hospital accommodation at the front is required for the sick and wounded of the war, and all the time of the medical officers may be taken up by the injuries and wounds received in the war. There is every reason, therefore, that the sufferers should be promptly restored to health.

The methods of cure of gonorrhœa which modern science has placed in our hands are sometimes rapid. Of course, the earlier the treatment is commenced the more readily and rapidly can the disease be cured; every day of delay prolongs greatly the time during which the treatment must last, but fortunately the reasons for and opportunities of concealing an attack will not be present with the recruits. At first the gonococcus is quite superficial, and if the treatment is commenced at an early stage the inflammation will be mainly confined to the anterior part of the urethra. It is generally agreed that in early cases the irrigation of the anterior urethra with weak solutions of mild antiseptics, such as solutions of organic silver compounds, is efficacious treatment; the irrigation should, however, be done with great care, for only if the treatment is carried out correctly does the method give very good results indeed. The discharge rapidly diminishes, and in a short time practically ceases, the pain soon comes to an end, and even the microscope may show the absence of the gonococcus. The time occupied in the treatment varies greatly, but the majority of cases, if attended to early, will not become very severe or develop complications. Even so, however, convalescence may be long delayed. From one of the Territorial general hospitals we learn that the majority of a not very serious number of cases have been admitted recently, and that the treatment will on the average last six weeks before the recruit can be considered absolutely safe and sound. This implies a sad waste of time in the training of the soldier, while indicating also that the infection has been incurred since enlistment. The exact value of gonococcal vaccines is not a subject of agreement. The very high hopes at first entertained of the vaccine treatment have not been fulfilled, though to a certain extent autogenous vaccines give better results. While there is a great variance in the opinions of surgeons on the point, on the whole it may be said that vaccines are best suited for the more chronic cases, which have not responded to the ordinary treatment, and that if a vaccine is used an autogenous vaccine is the more potent.

From two sources we have received information which could leave no doubt in any mind that the evil in certain localities is a real one, though it is probably not at present so widespread as these informants would seem to suggest. Thus in one Territorial general hospital which serves the needs of 36,000 troops the surgical staff have so far not seen one case of gonorrhœa; while from another district comes the statement that although this disease was at first very prevalent among the Territorials in camp the number of cases has very greatly diminished after removal to a second site and prompt treatment with injections of permanganate. Any general action would be very difficult, for it is easy to see that the mischief must have varying fomenting causes in different centres. But it ought to be possible to prevent the actual preying upon our young soldiers by libidinous women, and the resources of law and order should be drawn upon to this end. The warnings of officers and the more special instructions of the Royal Army Medical Corps to the men have done and are doing great good, the spread of temperance has had striking effect, but the sense of the public should be roused to the necessity of protecting the men who are serving us with their lives.

We understand that a committee organised by Sir Thomas Barlow and Sir Rickman Godlee is arranging for lectures on venereal diseases at some of the large camps which are being formed, and leading members of the medical profession in various parts of the country have been asked and have consented to give similar lectures to the men. Thus the matter is evidently not being lost sight of by those in authority.

BRITISH LEARNING AND THE WAR.

A representative group of British men of learning, mostly connected with our universities, have issued a reply to the German professors and men of science who recently appended to a denunciation of Great Britain an expression of their horror of war and of their zeal "for the achievements of culture." The document concludes as follows:—

> The German professors appear to think that Germany has in this matter some considerable body of sympathisers in the universities of Great Britain. They are gravely mistaken. Never within our lifetime has this country been so united on any great political issue. We ourselves have a real and deep admiration for German scholarship and science. We have many ties with Germany—ties of comradeship, of respect, and of affection. We grieve profoundly that, under the baleful influence of a military system and its lawless dreams of conquest, she whom we once honoured now stands revealed as the common enemy of Europe and of all peoples which respect the law of nations. We must carry on the war on which we have entered. For us, as for Belgium, it is a war of defence, waged for liberty and peace.

Among the signatories the following are so well known to the medical profession that no description of their positions is required: Sir Clifford Allbutt, Sir Charles Ball, Sir Thomas Barlow, Sir Watson Cheyne, Sir James Crichton-Browne, Sir William Crookes, Sir Francis Darwin, Sir Archibald Geikie, Sir Rickman Godlee, Dr. J. S. Haldane, Sir Wilmot Herringham, Professor J. N. Langley, Sir Oliver Lodge, Sir Donald MacAlister, Sir William Macewen, Sir Patrick Manson, Dr. F. W. Mott, Professor G. H. F. Nuttall, Sir William Osler, Sir Isambard Owen, Sir William Ramsay, Sir Ronald Ross, Professor Arthur Schuster, Professor C. S. Sherrington, Sir William Turner, and Sir Almroth Wright.

THE HEALTH OF THE HOME ARMY: A REPRESENTATIVE SANITARY SERVICE.

In a speech delivered at Buckley, Flintshire, on Monday Mr. Herbert Lewis, M.P., Parliamentary Secretary of the Local Government Board, referred to the excellent condition of health of the home army, and mentioned that only ten cases of enteric fever had been notified in the week ending Oct. 10th among the 600,000 men who were then serving, a number to which substantial addition has been made. There is no reason why the freedom from disease on which Mr. Lewis commented should not be maintained, although the concentration of large bodies of young men in camps and in public buildings and billets must bring into existence conditions which are very different from those with which the civil population is associated in time of peace, and to one side of this situation we refer in a separate note.

The country is much indebted to Sir Alfred Keogh for the encouragement which he gave to the movement for utilising the services of the medical officers of health of this country in assisting to preserve the health of the troops when mobilisation took place. In London these efforts at once had effect, and very shortly after the declaration of war the whole of the billets and encampments in the London military district were under the supervision of these officers. In the same way the localities in which troops of the London district were quartered in the neighbouring counties were brought under skilled sanitary supervision through the coöperation of the county medical officers of health, who were of course in intimate relation with the medical officers of health of districts, and who were thus able to make immediate arrangements for a system of sanitary supervision to be instituted. Whatever may arise in the future with which the health officers can deal is therefore provided for, and the coördination of the military and civil services for safeguarding the health of troops at which Sir Alfred Keogh aimed has been effected without loss of time.

The Society of Medical Officers of Health has placed its organisation at the service of the military authorities. It was stated by Mr. Herbert Lewis on the occasion to which we have referred, and as was explained last week by the president of the society, Dr. Herbert Jones, in his presidential address. The medical inspectors of the Local Government Board have been engaged in efforts to coördinate the two services in such a way as to provide for the sanitary supervision of billets and encampments, and for dealing with any sanitary questions which may arise. The steps which have already been taken have therefore provided machinery required under the special circumstances to which mobilisation has given rise, but there must necessarily be a number of points arising which will require to be settled before the organisation is complete.

For this purpose it is proposed to appoint a committee consisting of members who will represent the civil sanitary service on the one hand and the military authorities on the other. The intention to appoint such a committee has been announced, and it may be expected that its constitution will shortly be made known. If the county organisation be taken as a basis and county medical officers of health be invited to assist in a scheme of administration much of the difficulty attendant upon the division of England into sanitary districts, some of which are quite small, would be obviated. The war is only in an early stage, and as yet sufficient time has not elapsed to give opportunity for epidemic disease to be introduced into this country from abroad. At any rate, if later we should find the country invaded by small-pox or cholera there will be no difficulty in coping with it, and every step will be able to be taken to preserve the home army from special risks due to their concentration in the camps which are being formed.

GOVERNMENT VACCINES FROM THE INOCULATION DEPARTMENT OF ST. MARY'S HOSPITAL.

The Inoculation Department of St. Mary's Hospital has been busily occupied since the beginning of the war in preparing doses of vaccines for the British Expeditionary Force and the Allied armies generally. The total number of doses of vaccine supplied by the end of last week was 1,476,374, which represents approximately 166 gallons of liquid. These have been prepared by the staff of the department under the supervision of Captain S. R. Douglas, I.M.S. (ret.), Captain A. F. Hayden, I.M.S. (ret.), Dr. Alexander Fleming, Dr. John Matthews, and Dr. John Freeman. The preparation of these large quantities has been much facilitated by the use of the culture medium described in THE LANCET of Oct. 10th, p. 891. In addition to antityphoid vaccine, an "antisepsis" vaccine has also been made, consisting of 500 million staphylococcus aureus and 25 million streptococcus erysipelatis in each dose of 0·5 c.c. The idea is that such a dose might usefully be given in cases in which sepsis is to be apprehended or is commencing, while a much smaller dose, 0·05 c.c., might be given when such sepsis has established itself in the form of a septicæmia. In addition to preparing this antisepsis vaccine for the British army and navy, the inoculation department has sent 200,000 doses to the French army and 100,000 doses to the Belgian army, and its latest undertaking is to send 100,000 doses to the Russian army, and more if needed. We understand that Sir Almroth Wright, whose departure for France is announced elsewhere, is accompanied by Dr. Fleming with the object of ascertaining whether these vaccines are being used to full advantage and to consider the possibility of other vaccines being supplied. Another member of the inoculation staff may go to Galicia *viâ* Russia to obtain a culture of cholera. In the meantine the remainder of the staff will endeavour to keep abreast of the demand for vaccines.

OBITUARY OF THE WAR.

HARRY SHERWOOD RANKEN, M.B., CH.B. GLASG., M.R.C.P. LOND.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain H. S. Ranken, who died at Braisne on Sept. 25th from wounds received in action on Sept. 19th, was the elder son of the Rev. Henry Ranken, B.D., minister of Irvine parish, and in the Scots phrase was thus "a son of the manse." He was born on Sept. 3rd, 1883, and was educated at the Irvine Royal Academy, at Anderson's College, and at the University of Glasgow, where he graduated in medicine, with commendation in 1905. After qualifying he held the posts of resident house surgeon and house physician at the Glasgow Western Infirmary and assistant medical officer at the Brook Fever Hospital under the Metropolitan Asylums Board. He joined the Royal Army Medical Corps in January, 1909, taking first place at the entrance examination, and retaining this place at the examination during the probationary course. He also gained the Tulloch medal, the medal for military medicine, the medal and prize for tropical medicine, the De Chaumont prize in hygiene, and the prize of £20 for grand aggregate of marks in all examinations during the probationary course, open to the Royal Army Medical Corps and the Indian Medical Service. From 1909 to 1911 Lieutenant Ranken was stationed in London under the Eastern Command, and during this period was assistant to Sir William Leishman at the Royal Army Medical College and to Dr. H. G. Plimmer in the Brown Institute, and engaged himself in research work, particularly in connexion with sleeping sickness. In 1910 he obtained the M.R.C.P. diploma, and in the following year passed the examination for captaincy with special certificate and was promoted captain in July, 1912. During these years he contributed, jointly with Major W. B. Fry and Dr. Plimmer, several important papers on trypanosomiasis, which were published in the Proceedings of the Royal Society. From August, 1911, until June, 1914, he served as a member of the Soudan Government Sleeping Sickness Commission, and was in charge of the camp at Yei in the Lado enclave. When war was declared Captain Ranken volunteered for service with the Expeditionary Force, and was attached to the 1st Battalion King's Royal Rifle Corps. For his gallant conduct in the field he was recommended for the Victoria Cross by the officer commanding, and his name is mentioned in Sir John French's despatch. The bare record of his scientific and professional career shows that he was a man of unusual ability with a special leaning towards research, and his early and heroic death robs the Royal Army Medical Corps of one of its most promising and accomplished junior officers. Captain Ranken was a keen big game shot in the Soudan, and was a "scratch" golfer, representing his University in several matches and winning many cups and other prizes.

THOMAS SCATCHARD, L.M.S.S.A.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain Thomas Scatchard, who was killed in action on Sept. 8th, was born at Boston Spa on July 6th, 1878. He was the youngest son of Dr. T. E. Scatchard, whose family have been medical practitioners in that district of Yorkshire for several generations. He was educated at Epsom College and Leeds Medical School. He qualified in 1902 and entered the Royal Army Medical Corps in July, 1905, after having acted as house physician to the Leeds Infirmary and house surgeon to the Beckett Hospital, Barnsley. He spent the first 18 months of his military life at Aldershot, and then served at various stations in India for 5½ years, being promoted captain in 1909. Whilst in India he married the youngest daughter of the late Colonel de la Motte Hervey. Captain Scatchard was at the Connaught Hospital, Aldershot, before the outbreak of war, in charge of the salvarsan department, and was an examiner in this subject for promotion to the rank of captain. On mobilisation he was attached to the 26th Brigade, Royal Field Artillery, and sailed for France on August 15th. He was killed, with General Finlay and Colonel Grant Duff, by the bursting of a shell upon the Brigade Staff while on march between Choisy and Basseville. Captain Scatchard was a keen sportsman, devoted to fishing and shooting, a very good lawn-tennis player, and a great lover of animals, particularly horses.

JOHN FORBES O'CONNELL, M.B., B.S. LOND.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant J. F. O'Connell, who was killed in action on Sept. 20th during the battle of the Aisne, was the elder son of Lieutenant-Colonel D. V. O'Connell, R.A.M.C. (retired), and the great-grandson of Dr. James Forbes, Inspector-General of the Forces, who served with distinction in the Peninsular war and was the founder of the Army Medical Mess at Fort Pitt, Chatham. He was born on Feb. 18th, 1889, at Neemuch, Central India, where his father was then serving. He was educated at Epsom College, where he gained an entrance scholarship, and at St. Mary's Hospital, from which he graduated M.B., B.S. of the University of London in 1912, having obtained the Licence of the Society of Apothecaries a few months previously. After serving as house physician at St. Mary's Hospital and assistant resident medical officer at Hanwell Asylum, he joined the Royal Army Medical Corps in January, 1913, taking fifth place at the entrance examination. He was an ardent Rugby football player, and twice captained his hospital team, besides playing for the London Welsh and London Irish clubs.

Until his departure for the front on August 14th in medical charge of the 2nd Highland Light Infantry Lieutenant O'Connell was stationed at the Connaught Hospital, Aldershot. During his short life his open, generous, and cheerful nature won him many friends. Of his death, the officer commanding the Highland Light Infantry has written: "He was shot dead by a rifle bullet in the trenches while gallantly attending Second Lieutenant Fergusson who had been severely wounded. We all feel his loss most acutely. He was a general favourite with us all. He was extraordinarily brave under fire, and very hard working and popular with all ranks. The act which cost him his life was characteristic of him." Lieutenant O'Connell's early death is rendered sadder by the fact that he was married only a few months ago. His younger brother is serving with the Canadian contingent.

JAMES LAIDLAW HUGGAN, M.B., CH.B. EDIN.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant J. L. Huggan, who was killed at the battle of the Aisne on Sept. 16th, was born in 1890 and came of a well-known Jedburgh family. He was educated at Watson's College and at the University of Edinburgh, where he graduated M.B., Ch.B. in 1911. He was a very popular student in all circles and a general favourite, and he had an excellent record in all his professional examinations. After taking his medical degrees he acted as resident house surgeon at the Edinburgh Royal Infirmary, and then came to London to continue his studies. He joined the Royal Army Medical Corps in July, 1912, and went to the front as medical officer attached to the 3rd Battalion Coldstream Guards. Concerning his heroic death Colonel Drummond Hay has written: "Lieutenant Soames, Coldstream Guards, told me Dr. Huggan was extraordinarily gallant, and two days before he was killed he was recommended for the Victoria Cross for organising and leading a party of volunteers to remove a number of wounded from a barn that had been set on fire by the German shell fire. The work was carried out under a very heavy shell fire, and all the wounded were saved." Lieutenant Huggan's name has since been mentioned in Sir John French's latest despatch for special services in the field. As a Rugby footballer Huggan was very well known. After playing three-quarter back for Edinburgh University and the London Scottish clubs, he came very much to the front last year, and largely on account of his fine play for the Army against the Navy he was chosen to represent Scotland against England in the International match last March.

The following notes on the methods used in France for caring for the wounded are based on information obtained from the Military Service de Santé and from some of the leading Paris physicians by one of our Paris correspondents.

There was outspoken criticism of the delay which at first occurred, not only in transporting the wounded from the battlefield, but also in the trains which took them to the hospitals. Large numbers of men were left in barns lying on straw with inadequate medical attendance because the centralised authority had not foreseen the magnitude of its task and had refused to delegate its authority. All this is now being rapidly remedied.

It is still extremely difficult for any private motor ambulance, no matter how efficiently equipped, to obtain the necessary permit to go near the zone of operations, and this permit has to be renewed each week. But the problem of coping with thousands of wounded was so great that private enterprise is now allowed some play, but it must be admitted the harassed authorities were caught between the devil of the morbid curiosity mongers and the deep sea of the ubiquitous spy. Private offers were discouraged and the three branches of the French Red Cross were only allowed to receive the wounded distributed by the military authorities, but not to go and get them. Madame Michel Ephrussi has just given the army a perfectly organised sanitary train of 12 wagons and a luggage van fitted up as a kitchen and pharmacy. Dr. Tuffier, of the Hôpital Beaujon, one of the most famous Paris surgeons, who has just made a tour of inspection of the medical arrangements at the front, states that the sanitary train with complete convenience exists only in universal exhibitions; the passenger train with its three classes contains too few patients; only the freight train can convey 500 wounded, and as it is these trains which bring the supplies of ammunition and of food they are the only ones present which can be used. The criticisms of these trains are justified, but when there were 4000 wounded to evacuate every evening it was impossible, cruel as this decision might be, to employ another means of transport.

The two great difficulties beside the initial one of the lack of any adequate organisation to cope with such numbers have been the length of the field of operations extending from 150 to 200 kilometres and the imperative necessity of using the trains primarily for the movement of troops and for their commissariat. The conditions of transport are now remedied. The ordinary trains with all danger of infection are still used for the Paris hospitals, but the rest hospitals installed in the chateaux between Paris and the fighting line are now being allowed to use their own service of motor ambulances if they are lucky enough to possess them. The American hospital installed in the Lycée Pasteur has had an admirable service of motor cars from the first, and their apparent immunity from the annoyances of red tape has been the envy of other establishments. Madame Ida Rubenstein has given a number of motors to this hospital as well as bringing in wounded by motor to the ambulance which she has installed in the Hôtel Bristol. I believe the American hospital has 20 cars, and in a short time the British Red Cross is to have 200 working in France. The need for more cars is still pressing. They can, of course, only accommodate a limited number of wounded—the usual model takes four wounded lying down and two attendants, or two badly wounded and six able to sit up—but they can get down to Paris from the front in two hours, while a cattle train without doctors or nurses has before now been left on a siding, and only arrives sometimes in 20 hours. Paris is even now much better served than the provinces, where in some cases there has been lamentable overcrowding with very insufficient equipment. But all these motors serve only to supply Paris, or, at best, the chateaux hospitals in the neighbourhood. Too much stress can hardly be laid on the urgent need that exists for a similar service for some of the provinces. Everything that exists in abundance in Paris is lacking in many districts. A friend of mine reports that in a town in the Correz department 2500 wounded were brought to a tiny hospital where no provision was made for them. A report published in Paris on Oct. 5th by an eye-witness states that in one provincial hospital the surgeons were working night and day, as there were only three to every 1000 men.

In spite of all the defects of officialdom, which I can see are being remedied as rapidly as possible, the general health of the allied troops is declared to be surprisingly good, not so many cases of disease being reported as in times of peace. There have been a few isolated cases of typhoid and scarlet fever among the recruits. Rigorous precautions have been taken to prevent the spread of infection, and the mortality among the typhoid cases has only been 6 per cent. and among the scarlet fever 2 per cent.

The head surgeon in one of the big Paris ambulance hospitals gave me the following observations made in the course of his work. Alluding to dum-dum bullets, he said it is practically impossible to decide if a wound has been caused by a dum-dum or not in isolated examples. If a man is hit by a shrapnel bullet at a distance of 500 yards and the ball happens to splinter a bone instead of merely passing through tissue it makes a large hole on leaving the body exactly like a dum-dum bullet would do. Another possibility is that the bullet may be flattened and made jagged or practically turned into a dum-dum after leaving the gun by the simple fact of striking some hard substance, such as a stone, another projectile in the air, or even part of the soldier's accoutrements before it strikes him, making a dangerous wound.

An interesting fact which he noted is the rarity of abdominal wounds. Wounds in the upper and lower limbs are still the most frequent, and there have been many in the head, the spinal column, and the chest. The greater number of cases of tetanus have occurred among the German wounded. Here officialdom has been open to criticism, in the opinion of my informants. On Oct. 6th an order was issued from the French Minister of War that no serum was to be sent from the Pasteur Institute without an order from Bordeaux. Luckily most of the hospitals had already laid in a stock, but in case this gives out a patient might die ten times over before an order for the serum could possibly be sent for and return from Bordeaux in the present state of the post. It is realised in Paris that the serum should be given to every wounded soldier as soon as he is taken off the battlefield; if there is a delay till he finally gets to hospital the disease is often too far advanced for hope. The military authorities possess two-thirds of the stock of serum available. The reason for the order was the danger of the stock giving out if used indiscriminately. Inquiries made at the Pasteur Institute prove that there is little fear of any shortage in the supply. It is now possible to furnish 4000 bottles of serum per day, and in three months' time a further supply can be guaranteed.

THE WOUNDED IN THE WAR.

We publish this week a review by Mr. G. H. Makins, consulting surgeon to the Forces Oversea, upon the wounded in the present campaign, which shows clearly the great improvement that has taken place in the condition of the patients under the more satisfactory arrangements for transport that are now possible, and which day by day are leading to the disappearance of the methods graphically portrayed below by a Paris correspondent. The abatement of tetanus is most satisfactory, while the efforts at treatment have been assiduous. Mr. Edmund Owen's notes on the cases of wounded that came suddenly under his care, and that of the staff at the Epsom and Ewell War Hospital, indicate the terrible severity of many of the shell wounds, and his testimony to the courage of the sufferers is moving. The report by Staff Surgeon Pick, Surgeon Rankine, and Surgeon Lambert of the cases which came under their care after engagements in the North Sea also illustrates the severity of the shell wounds received and the value of good first aid. In many of the cases the interval between the infliction of the injury and the commencement of anything more than first-aid treatment amounted to many hours, so that often the degree of shock was very great, but it is clear that the first aid that was afforded did much to check septic processes. The features of the wounds caused by the shells were in many respects remarkable. In some the shell fragment had scooped out a portion of tissue, so that there was no wound of entrance or exit, but merely a complete loss of the superficial tissues. In punctured wounds the fragment sometimes buried itself deeply, while in others it made a long subcutaneous track. Whenever serge from the clothing was carried in with the shell fragment the wound was more septic than when pieces of linen were present; this is a little difficult to explain. The German sailors were wearing lifebelts when in action, so that in many cases pieces of cork from the belts were found in the wounds. The paper is one of the earliest to report the injuries produced by high explosives, and attention may also be drawn to the testimony of the authors to the value of vaccines.

WORK OF THE BRITISH RED CROSS SOCIETY.—In a summary of the work accomplished during the week ending Oct. 21st the British Red Cross Society states that the total number of beds in the auxiliary home hospitals approved by the War Office is now 6480, and between 50 and 60 Voluntary Aid Detachments are being utilised in connexion with these hospitals. The amount of stores sent abroad by the Stores and Transport Department during the past week was comparatively small. This was due to the large quantity despatched in the previous week, to the desirability of keeping a full stock of supplies in view of the great influx of Belgians into England, and to the change of headquarters in France from Paris to Bolougne. In response to a sudden call from the War Office hospital clothing for 1000 Indian soldiers was sent to Netley the same evening. Garments to the number of 53,787 were issued during the week, and £2235 were expended upon purely medical stores. The society now has six surgeons always at hand ready to be sent in response to emergency calls, while the personnel of the ambulance train is being got ready, and a permanent "emergency unit" of 12 nurses is now ready. During the week 37 motor ambulances and 2 motor cycles were despatched to the Continent, and 13 ambulances were furnished to the War Office. The Army Council has expressed its appreciation of the assistance rendered by the Voluntary Aid Detachments in the Eastern Command during the disembarkation and disposal of the sick and wounded Belgian soldiers arriving between Oct. 12th and 16th.

WOUNDED AT LONDON HOSPITALS.—328 Belgian wounded have been received at the London Hospital, Whitechapel-road. They have been through the siege of Antwerp and were brought to England when that city was evacuated. All the English wounded who were originally taken in at this hospital have been discharged. 50 wounded Belgian soldiers have been received in St. Bartholomew's Hospital, and 11 wounded Belgian officers at the Red Cross Hospital in Fishmongers' Hall. Most of the wounds have been due to shrapnel.

EDINBURGH IN WAR TIME.—Our Edinburgh correspondent writes: Lord Kitchener's nomination as Rector of the University has been welcomed by all sections of the undergraduates, and as there will be no contest the nomination and election will take place together on Oct. 24th. The winter session of the University opened on Oct. 6th. From the matriculation figures it appears that there is a fall in the number of students of fully 400, due to the fact that so many men have replied to the call of the country. 230 members of the Officers' Training Corps have received commissions: Artillery, 111; infantry, 78; engineers, 10; medical, 31; while over 60 of the last unit form the field ambulance section of the Scottish Horse. About 100 are Territorials and distributed between the Edinburgh new battalion, the Scottish Horse, and many other corps. When all are summed up the total number of students and graduates should be 1000. What will rank as one of the quietest graduation ceremonies held in connexion with this University took place in the McEwan Hall on Oct. 16th. There was an entire absence of the usual display of student spirits, and the attendance both of students and of the public was smaller than usual. For these features the shadow of the war is accountable. Principal Sir William Turner, who has completed 60 years of service for the University—demonstrator in and then professor of anatomy, and finally principal and vice-chancellor—occupied the chair.

Dalmeny House, which the Earl of Rosebery has generously placed at the disposal of the naval and military authorities for the treatment of wounded, was called into service for the first time on Oct. 16th, when a trainload of sick and wounded from the battle front in France arrived in Edinburgh and were conveyed by motor transport to the hospital. Men from a number of regiments were among the detachment, and the Red Cross Society rendered valuable assistance by having a fleet of over 30 motor vehicles in readiness at the station for the conveyance of these patients.—On the night of Oct. 17th an ambulance train from Southampton arrived at Prince's-street Station. The wounded men numbered about 100. All were taken to the Royal Infirmary. The majority of the men were wounded round Béthune and Lille.—On Monday morning, Oct. 19th, at the early hour of 5 o'clock, another body of wounded numbering about 100 arrived at Prince's-street and were conveyed in motor ambulances and private cars to Craigleith Hospital.

AUSTRALIA AND THE WAR.—Our Australian correspondent sends the following timely details:—"The war is the sole topic of interest, and preparations are going forward actively for the despatch of Australian contingents. The volunteering has been satisfactory, and the medical officers have been somewhat strict in their examination, so that physically the Commonwealth force will be a fine fighting unit. It is now announced that in addition to the field medical equipment with the troops the Minister of Defence proposes to send a light horse field ambulance, a field ambulance, a clearing hospital, two stationary hospitals, and two general hospitals. These will require about 1000 persons of all ranks, including trained nurses and 80 medical officers. Many well-known medical men have volunteered. An interesting feature of the medical outfit already in the field is an X ray plant mounted upon a motor-car and freely movable at top speed. It has been designed and carried out by Dr. Stanley Argyle, specialist to the Alfred Hospital and its cost was borne by private subscription. It will be in charge of Captain Nicholas, late resident at the Melbourne Hospital. The *Grantala* has been fitted as a hospital ship with a staff of seven or eight surgeons and Mr. W. James, M.S. Melb., as consulting surgeon, and is in commission. Amongst civil surgeons who have offered their services and been accepted is Mr. F. D. Bird, lecturer in surgery at the Melbourne University, and he will provide two nurses for hospital duty. Vaccine for the preventive inoculation of enteric fever has been prepared by the New South Wales Department of Public Health and will be available for the medical profession. It will also be used for inoculation among the troops being despatched to the war. Sufficient to treat 22,000 men is said to have been supplied at a cost of about 1*d.* per man."

THE QUEEN'S CANADIAN MILITARY HOSPITAL.—With the approval of the War Office, Beachborough Park, near Shorncliffe, has been placed by Sir Arthur and Lady Markham at the disposal of the Canadian War Contingent Association for use as a military hospital, and for this purpose it has now been prepared and equipped. It is to be known as the Queen's Canadian Military Hospital and has accommodation for upwards of 50 patients. The medical and surgical organisation is under the supervision respectively of Sir William Osler and Mr. Donald Armour. The nursing staff consists of Canadian-trained nurses under the superintendence of Miss Amy MacMahon, of Toronto.

LONDON PANEL PRACTITIONERS' GIFT.—The motor ambulance presented by the practitioners on the panel in the County of London has been handed over to the British Red Cross Society and will immediately be sent to France for use in bringing wounded soldiers from the front to the base hospitals.

BELGIAN WOUNDED AT HASLAR.—The first large batch of wounded and sick to be admitted to the Royal Naval Hospital, Haslar, for treatment since the outbreak of the war arrived on Oct. 13th. They numbered 572, all Belgians, including 142 officers. They were chiefly victims of the bombardment of Antwerp. Some were seriously injured, but a few were refugees, who have now been sent elsewhere.

Dr. John Cosmo Stuart Rashleigh, of Throwleigh, Okehampton, has presented a fully equipped motor ambulance to the British Red Cross Society, and is himself going to the front with the ambulance.

MEDICAL MAGISTRATE.—Dr. Edmund Hobhouse has been placed on the commission of the peace for the borough of Hove.

Medical News.

UNIVERSITY OF OXFORD.—The following medical degrees have been conferred:—

D.M.—H. J. B. Fry, Magdalen; and O. A. R. Berkeley-Hill, Trinity (*in absentiá*).

UNIVERSITY OF CAMBRIDGE.—The following medical degrees have been conferred:—

M.D.—R. F. Higgin, Caius.

M.B., B.C.—C. G. H. Moore, Caius; and L. E. S. Sharpe, Trinity.

The following candidates have satisfied the examiners in both parts of the examination in Sanitary Science:—

Edward Bach, James Lionel Bocarro, Jane Malcolm Davidson, Leander Lowrie Fyfe, Hirji Dorabji Gimi, Ignatius James Khaw Oo Kek, John McCallum Lang, Ram Chandr Malhotra, Bidham Prosad Mozoomdar, *William Henry Peacock, Raghu Nath Roy, and †Ashley George Gyton Thompson.

* Distinguished in the practical application of sanitary science and pathology. † Distinguished in bacteriology.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.—At the examinations conducted on Oct. 7th for the Licence in Dental Surgery, the following Associates passed the Final Examination and were admitted Licentiates in Dental Surgery:—

Roland Harry Bebb, Walsall; Francis Edward Stuart Brailsford, Enfield, Middlesex; John Stewart Marshall Connell, Glasgow; John Graham, Stirling; William Gilmour Gray, Glengarnock; Arthur William Whewell Holmes, Hest Bank, Lancaster; Percy Hope Johnstone, Leytonstone, Essex; James Alexander M'Gowan, Elgin; and Frederick William Robinson, Erdington, Birmingham.

SOCIETY OF APOTHECARIES OF LONDON.—Mr. Meredith Townsend, M.R.C.S. Eng., has been elected Master of the Society of Apothecaries for the ensuing year, and the new wardens are Dr. George Amsden and Mr. A. H. W. Ayling.

ROYAL SANITARY INSTITUTE.—The following medical practitioners have this month been elected members of the Royal Sanitary Institute:—Dr. J. D. Buchanan (Lancaster), Dr. W. A. Daley (Bootle), Dr. G. H. Dart (Greenwich), Dr. F. Hauxwell and Dr. S. J. E. Holden (St. Helens), Mr. W. M. McIlraith (Rawtenstall), Mr. C. D. Outred (Gravesend), and Dr. A. E. Townley (Oswaldthistle).

THE next meeting of the Life Assurance Medical Officers' Association will be held at 1, Wimpole-street, W., in the rooms of the Royal Society of Medicine on Wednesday, Nov. 4th, at 5.30 P.M., when Dr. H. J. Cardale and Dr. J. Fletcher Porter will initiate a discussion on "The Certification of Invalidity under the National Insurance Act." The association will welcome the presence of any medical man.

CHARING CROSS HOSPITAL: THE HUXLEY LECTURE.—The Huxley Memorial Lecture on Recent Advances in Science in Relation to Medicine and Surgery will be delivered in the hospital on Monday, Nov. 2nd, at 3 P.M., by Sir Ronald Ross, F.R.S., Sir Thomas Barlow, Bart., President of the Royal College of Physicians of London, in the chair. The lecture is open to all members of the medical profession.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—At the annual general meeting of this society, held on Oct. 16th at 1, Upper Montague-street, London, W.C., Dr. Herbert Jones, D.P.H., was inducted as President for the ensuing year and delivered his presidential address upon "The Public Health Service and the National Crisis." Sir Arthur Whitelegge and Dr. Edward C. Seaton were elected honorary Fellows, and Dr. E. W. Hope was presented with his portrait by the North-Western Branch of the society.

HUNTERIAN SOCIETY.—The Presidential address will be delivered by Dr. T. Glover Lyon at the Barbers' Hall, Monkwell-street, E.C., on Wednesday next, Oct. 28th, at 4.30 P.M. Dr. Glover Lyon will take for his subject "The Barber-Surgeons and the Medical Profession." The address will be illustrated by many objects of interest belonging to the company, including the famous painting by Holbein of the granting of a charter to the company, the cup presented by Henry VIII., and another cup presented by Charles II.

These and other numerous works of art and relics will be displayed for the inspection of Fellows and visitors. Sir Thomas B. Crosby, M.D., hopes to be present and to address the meeting on the relation of the Barbers' Company to the corporate life of the City of London. Tea will be served at 4 P.M. All members of the medical profession are cordially invited.

Royal College of Physicians of Ireland.—The annual meeting of the Royal College of Physicians of Ireland was held on the morrow of St. Luke's day. The annual dinner was pretermitted on account of the war. Dr. C. E. FitzGerald's term of office as president has concluded, to the great regret of the Fellows. He attended to his duties with great assiduity, and by his courtesy to all, and by his ready grasp of matters under discussion, he guided the College business with success. He is succeeded by Dr. E. MacD. Cosgrave.

The Child-Study Society, London.—The following programme of lectures has been arranged for the present session: Oct. 29th, Miss Evelyn Fox, on the After-care of Mental Defectives; Nov. 5th, Mr. P. Macleod Yearsley, F.R.C.S., on the Classification of the Deaf Child for Educational Purposes; Nov. 19th, Dr. T. Percy Nunn, on Development of the Practical Imagination in Children; Dec. 3rd, Miss Margaret Corner, M.A., on Self-expression through Language with Older Children. The meetings will be held at 7.30 P.M. at the Royal Sanitary Institute, 90, Buckingham Palace-road, S.W.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Boreham, H. W., M.B., B.Ch. Edin., has been appointed Clinical Tutor in the Edinburgh Royal Infirmary.

Coates, W. Harrison, M.R.C.S., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Hucknall Torkard District of the county of Nottingham.

Dickie, J. K. Milne, M.D. Edin., has been appointed Clinical Tutor in the Edinburgh Royal Infirmary.

Graham, G. M., F.R.C.S. Edin., has been appointed Surgeon to the Craigleith Hospital.

Johnstone, G. Gordon, M.B., B.C. Cantab., has been appointed Clinical Assistant in the Ophthalmic Department at University College Hospital.

Johnstone, R. W., M.D. Edin., has been appointed Clinical Tutor in the Edinburgh Royal Infirmary.

Jones, G. J., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Rathfriland District of the county of Down.

Madill, J. H., M.B., Ch.B. Edin., has been appointed Clinical Assistant in the Edinburgh Royal Infirmary.

Martin, E. K., M.B. Lond., F.R.C.S. Eng., has been appointed Junior Surgical Registrar at University College Hospital.

Mathewson, George D., M.B. Edin., has been appointed Clinical Assistant in the Edinburgh Royal Infirmary.

Ritchie, A. G., M.B., Ch.B. Edin., has been appointed Clinical Tutor in the Edinburgh Royal Infirmary.

Rutherford, Andrew, M.B., Ch.B. Edin., has been appointed Clinical Tutor in the Edinburgh Royal Infirmary.

Steele-Perkins, Duncombe Steele, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer in charge of Troops at Honiton, Devon.

Stephen, J. W., M.B., Ch.B. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Beith District of the county of Ayr.

Taylor, Mark Ronald, L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer for the Wendron District by the Helston (Cornwall) Board of Guardians.

Thompson, Robert Busher, M.B., Ch.B. Vict., has been appointed Medical Officer for Brixham and Churston District by the Totnes (Devon) Board of Guardians.

Thomson, H. J., M.B., Ch.B. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Alford District of the county of Aberdeen.

Young, James, M.D. Edin., has been appointed Clinical Tutor in the Edinburgh Royal Infirmary.

Yule, Robert Mortimer, M.D. Aberd., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for the Sheriffdom of Caithness, Orkney, and Shetland, to be attached more particularly to the Shetland District.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Ayr District Asylum.—Assistant Physician. Salary £200 per annum, with board, apartments, laundry, and attendance.

Birkenhead Borough Hospital.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birmingham City Asylum, Rubery-hill.—Junior Assistant Medical Officer. Salary £200 per annum, with apartments, board, laundry, &c.

Birmingham Union.—Dudley-road Infirmary: Third Assistant Medical Officer and Fourth Assistant Medical Officer. Salary at rate of £170 and £160 per annum respectively. Erdington Infirmary and Cottage Homes: Assistant Medical Officer. Salary at rate of £200 per annum. Selly Oak Infirmary: Assistant Medical Officer. Salary at rate of £180 per annum. Apartments, rations, laundry, and attendance in each case.

Bootle, Corporation Hospital for Infectious Diseases.—Resident Medical Officer, unmarried. Salary £250 per annum, with board, washing, and apartments.

Bristol City Asylum, Fishponds.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

Bromsgrove, Worcestershire Asylum.—Deputy Medical Superintendent and Second Assistant Medical Officer. Salary £300 and £225 per annum respectively, with apartments, board, washing, and attendance.

Burslem, Haywood Hospital.—Female Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

Bury and District Joint Hospital Board.—Assistant to Medical Superintendent. Salary £200 per annum, with board, washing, and lodging.

Canterbury, Kent County Asylum, Chartham.—Junior Assistant Third Medical Officer, unmarried. Salary £250 per annum, with quarters, board, washing, &c.

Chelsea Hospital for Women, Fulham-road, S.W.—Dental Surgeon.

Cheshire Education Committee.—Fourth Assistant to the Chief School Medical Officer. Salary £350 per annum.

Chesterfield and North Derbyshire Hospital.—Senior House Surgeon. Salary £200 per annum, with board, apartments, and laundry.

Chichester, Royal West Sussex Hospital.—House Surgeon, unmarried. Salary £110 per annum, with board, residence, and washing.

City of Westminster Union Infirmary, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

Constance-road Institution, Grove Vale, East Dulwich.—Temporary Resident Medical Officer. Salary at rate of £225 per annum, with apartments, board, washing, &c.

Derby County Sanatorium.—Resident Assistant. Salary £250 per annum, with board, lodging, and laundry.

Douglas, Noble's Isle of Man Hospital.—Resident House Surgeon, unmarried. Salary £150 per annum, with board and washing.

Durham County Council.—Female Assistant School Medical Officer. Salary £300 per annum.

Evelina Hospital for Sick Children, Southwark, S.E.—House Physician for six months. Also House Surgeon for four months. Salary at rate of £75 per annum, with board, residence, and washing.

Exeter City Asylum.—Medical Superintendent. Salary £500 per annum, with unfurnished house, coal, lighting, laundry, &c.

Gateshead Asylum, Stannington, Northumberland.—Assistant Medical Officer, unmarried. Salary £220 per annum, with rooms, board, and laundry.

Glamorgan County Council.—Medical Officer. Salary £250 per annum.

Gloucester, Gloucestershire Royal Infirmary and Eye Institution.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

Great Yarmouth County Borough.—Assistant Medical Officer of Health. Salary £250 per annum.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £140 per annum, with board, lodging, and washing.

Greenwich, Dreadnought Hospital.—House Surgeon and Casualty Officer. Salary at rate of £50 per annum each, with board, residence, and washing.

Halifax Royal Infirmary.—Second and Third House Surgeons, both unmarried. Salaries £120 and £100 per annum respectively, with residence, board, and washing.

Harrogate Infirmary.—Resident House Surgeon. Salary £100 per annum.

Harrow-on-the-Hill Urban District Council.—Medical Officer of Health. Salary at rate of £200 per annum.

Hereford County and City Asylum.—Junior Assistant Medical Officer. Salary £200 per annum and all found except stimulants.

Huddersfield Royal Infirmary.—Senior and Junior Assistant House Surgeons. Salary £80 per annum each, with board, rooms, and washing.

Hull Royal Infirmary.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Honorary Assistant Medical Officer to attend Out-patients' Department.

King's Lynn, Lynn and West Norfolk Hospital.—House Surgeon. Salary £150 per annum.

Leeds, Hospital for Women and Children.—Two House Surgeons for six months. Salary at rate of £50 per annum, with board.

Leicester Royal Infirmary.—Resident Assistant House Surgeons and Dressers.

Liverpool, St. Paul's Eye Hospital.—House Surgeon. Salary £80 per annum, with board and residence.

Manchester, Ancoats Hospital, Mill-street.—Assistant House Surgeon. Salary £70 per annum, with board and residence.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester Poor-law Institution, Crumpsall.—Second Resident Assistant Medical Officer and Junior Resident Assistant Medical Officer, both unmarried. Salary £180 and £160 per annum respectively, with rations, apartments, fire, light, washing, and attendance.

Manchester Royal Eye Hospital.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

Metropolitan Asylums Board Infectious Hospitals Service.—Assistant Medical Officers, unmarried. Salary £250 per annum, with board, lodging, and washing.

Metropolitan Ear, Nose, and Throat Hospital, Fitzroy-square, W.—House Surgeon. Salary £150 per annum.

Middlesbrough, North Ormesby Hospital.—House Surgeon. Salary £120 per annum, with board, washing, and attendance.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Junior House Surgeon for six months. Salary £85 per annum, with board, residence, and laundry.

Mount Vernon Hospital for Consumption and Diseases of the Chest.—Assistant Physician.

Newcastle-upon-Tyne and Northumberland Sanatorium for Consumptives, Barrasford, North Tyne.—Resident Medical Officer, unmarried. Salary £350 per annum, with board, residence, and laundry.

Newcastle-upon-Tyne Hospital for Sick Children.—Senior Medical Officer and Junior Medical Officer for six months. Salary £100 and £80 per annum respectively, with board, lodging, and laundry.

Newcastle-upon-Tyne, Royal Victoria Infirmary.—Four House Physicians, Four House Surgeons, Accident Room House Surgeon. House Surgeon to the Aural and Ophthalmic Department, House Surgeon to the Skin and Gynæcological Department, and House Surgeon to the Out-patient Dressing Department.

Newport (Mon.), Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

Northampton County Asylum, Berry Wood.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

Northampton General Hospital.—Two House Surgeons. Salary £120 per annum, with apartments, board, washing, attendance, &c.

Nottingham Children's Hospital.—Female House Surgeon for six months. Salary at rate of £130 per annum, with apartments, board, and washing.

Nottingham General Hospital.—Assistant House Physician and Assistant House Surgeon for six months. Salary at rate of £100 per annum each, with board, residence, and laundry. Also Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

Oldham Royal Infirmary.—Third House Surgeon for six months. Salary at rate of £100 per annum, with board and residence.

Paddington Board of Guardians.—District Medical Officer. Salary at rate of £100 per annum.

Paddington Infirmary Workhouse, 285, Harrow-road, Paddington, W.—Two Assistant Medical Officers for six months. Salary at rate of £250 per annum, with board, lodging, and washing.

Preston Royal Infirmary.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

Putney Hospital, Putney Common, S.W.—Resident Medical Officer. Salary £150 per annum, with rooms, board, and laundry.

Rochester, St. Bartholomew's Hospital.—Resident House Physician for six months. Salary at rate of £110 per annum, with board, residence, and laundry.

Royal Eye Hospital, Southwark.—Senior House Surgeon. Salary £70 per annum.

Royal Waterloo Hospital for Children and Women, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

Ryde, Royal Isle of Wight County Hospital.—Resident House Surgeon, unmarried. Salary £115 per annum.

St. Albans, Herts County Asylum, Hill End.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, with board, lodging, and washing.

St. Marylebone General Dispensary, 77, Welbeck-street, Cavendish-square, W.—Honorary Anæsthetist to the Institution and Anæsthetist to the L.C.C. School Dental Clinic. Also Honorary Gynæcologist, Temporary Honorary Ophthalmic Surgeon, and Honorary Medical Radiographer.

St. Mary's Hospital for Women and Children, Plaistow, E.—Female Resident Medical Officer and Female Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

Salford Royal Hospital.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

Salisbury (General) Infirmary.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

Sheffield, East-End Branch of the Children's Hospital.—House Surgeon. Salary £120 per annum, with board and residence.

Sheffield Royal Infirmary.—Two House Surgeons and Assistant House Physician for six months. Salary £100 per annum each, with board and residence.

Southampton Free Eye Hospital.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

South Shields County Borough.—Assistant School Medical Officer and Assistant Medical Officer of Health. Salary £300 per annum.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

Southwark Union Infirmary, East Dulwich Grove, S.E.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salary at rate of £170 and £160 per annum respectively, with board, lodging, and washing.

Stirling District Asylum, Larbert, N.B.—Female Third Assistant Medical Officer. Salary £140 per annum, with board, &c.

Stroud General Hospital.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.

Sunderland Royal Infirmary.—Junior House Surgeon. Salary £100 per annum, with board, residence, and laundry.

Taunton, Taunton and Somerset Hospital.—Senior House Surgeon and Assistant House Surgeon. Salaries £120 and £80 per annum respectively, with board, lodging, and laundry.

Throat Hospital, Golden-square, W.—Honorary Anæsthetist and Honorary Assistant Anæsthetist. Also Honorary Surgical Registrar for six months. Also Resident House Surgeon. Salary £75 per annum.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

Tunbridge Wells General Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, &c.

Wakefield, West Riding Asylum.—Assistant Medical Officer. Salary £230 per annum, with apartments, board, washing, and attendance. Also Female Junior Assistant Medical Officer. Salary £175 per annum.

Walsall, County Borough of.—School Medical Inspector and Assistant Medical Officer of Health. Salary £300 per annum.

Walsall and District Hospital.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

Warrington Infirmary and Dispensary.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

West Ham and Eastern General Hospital, Stratford, E.—Senior House Physician. Salary £120 per annum, with board, residence, and washing.

Western Dispensary, Rochester-row, Westminster. — Resident Medical Officer. Salary £100 per annum, with apartments, lighting, laundry, and attendance.

Whitechapel Dispensary for the Prevention of Consumption.—Temporary Medical Officer. Salary £500 per annum.

Wolverhampton and Staffordshire General Hospital.—House Surgeon and Resident Medical Officer for six months. Salary each at rate of £125 per annum, with board, rooms, and laundry. Also Pathologist. Salary £200 per annum.

Worcester County and City Asylum, Powick, near Worcester.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Ballinamore, in the county of Leitrim; and at Woburn Sands, in the county of Bedford.

Births, Marriages, and Deaths.

BIRTHS.

Ackroyd.—On Oct. 20th, at Royston, Herts, the wife of Harold Ackroyd, M.D., of a son.

Brown.—On Oct. 19th, at Kensington Park-road, W., to Dr. and Mrs. David Brown, of Tientsin, China, a son.

Caddy.—On Oct. 13th, at Richmond, Surrey, the wife of Dr. Adrian Caddy, F.R.C.S., of Calcutta, of a daughter.

Dally.—On Oct. 20th, at 19, Upper Wimpole-street, W., the wife of J. F. Halls Dally, M.A., M.D., M.R.C.P., of a daughter.

Fennell.—On Oct. 17th, at the Manor House, West Hoathly, the wife of Charles Henry Fennell, M.D., of a daughter.

Good.—On Oct. 13th, at High Bickington, N. Devon, the wife of Arnold Saxty Good, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

MacNabb—Bywater.—On Oct. 17th, at St. Cuthbert's Church, Edinburgh, H. H. MacNabb, M.D., of Manchester, to Annie Emily, second daughter of Mrs. Bywater, of Innescote, Roxburgh.

Russell—Lambert.—On Oct. 15th, at St. Peter's Church, Woodmansterne, Surrey, Trevor Cecil Russell, Prob. Surg. R.N.V.R., to Joyce Ethel Julia, second daughter of Colonel and Mrs. Heygate Lambert, of Woodmansterne.

Smith—Hamilton.—On Oct. 17th, at St. Mary Magdalen's, Mortlake, Hector Smith, M.B., B.S. Lond., R.A.M.C. (Special Reserve), to Ada Maud Hamilton, youngest daughter of Dr. Hamilton, Essex House, Barnes, Surrey.

DEATHS.

Haldane.—On Oct. 18th, at Viewforth, Bridge of Allan, William Haldane, M.D., F.R.C.P. Edin., F.F.P.S. Glasg., aged 67 years.

Hartley.—On Oct. 3rd, at 26 Stanhope-road, Darlington, John Hartley, F.R.C.S. Eng., aged 63 years. For five years Senior Demonstrator of Anatomy at the Middlesex Hospital, London.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

THE RUSSIAN GOVERNMENT AND ALCOHOL.

IT is reported that the Tsar has decided to prohibit for ever in Russia the Government sale of alcohol, while since the beginning of the war all Russian vodka shops have been closed, in the interests of public health and morality. In the sixteenth century the spirit trade was a State monopoly, but in times of urgent need of money it was found desirable to let the drinking-shops and distilleries to private persons for a certain rental. Changes from one system to another were frequent. By a ukase of August 22nd, 1794, the "otkoop" system (i.e., the letting to private persons) was introduced, but was replaced by the monopoly system by the ukase of April 2nd, 1819. In the "forties" the "otkoop" was again in force, and the last "otkoop" period was 1859-63. Then an excise system was proposed and accepted. The edict of June 6th, 1894, was issued by Russia to gain control over the trade, and the compulsory sale of spirit to the Crown at a stipulated price was enforced, which resulted in a large production, and stability of trade, and the export rebate was also reformed. In the next ten years there was a rapid development of the technical side of the trade, and the Crown demanded that only spirit of high quality and purity should be used for the manufacture of liquor, and this caused the introduction of improved apparatus.

PAIN IN THE HEEL.

To the Editor of THE LANCET.

SIR,—In reply to Dr. J. L. Martin's request for suggestions for treatment in to-day's LANCET, I have to say that pain in the heel is often associated with uric acid in excess. I have notes of three such cases in which all pain disappeared after voiding a small uric acid calculus by the urethra. I believe the late Sir James Paget drew attention to these associated conditions. I am, Sir, yours faithfully,

London, Oct. 17th, 1914. SEYMOUR TAYLOR.

To the Editor of THE LANCET.

SIR,—Replying to Dr. J. L. Martin's inquiry *re* painful heel, I find the following notes in my A B C book, taken from an article in the *Clinical Journal*, April, 1913, by Mr. A. H. Tubby:—

"*Painful Heel.*—(1) A small bony spur discoverable by X ray examination; (2) shortening of one leg (common); (3) epiphysitis of the os calcis; (4) constant standing (another common cause); (5) trauma; (6) flatfoot; (7) rheumatism, gout, syphilis, tubercle."

I may say that in a case of an old lady which baffled me for some weeks the first cause was found.

I am, Sir, yours faithfully,
CHAS. W. BUDDEN, M.D. Liverp.
Hoylake, Cheshire, Oct. 19th, 1914.

HEALTH AND SANITATION OF THE GOLD COAST.

ACCORDING to the annual Blue-book, recently forwarded to the Colonial Office by the Acting Governor (Mr. W. C. F. Robertson), the population of the Gold Coast Colony and its dependencies amounted at the last Census to 1,503,386. The number of Europeans resident in the Colony, Ashanti, and the Northern Territories is given as 2590, as compared with 2367 in 1912. Among the European population a decrease per 1000 of 3·33 in the death-rate and an increase of 1·56 in the invaliding rate are recorded. Death in the case of 6 European officials was due in 2 instances to yellow fever, in 2 to blackwater fever, in 1 to hyperpyrexia, and in 1 to meningitis. There were 11 cases of yellow fever amongst Europeans, 6 of which proved fatal. Of 30 officials invalided, 4 were for malaria, 1 for blackwater fever, 1 for neurasthenia, 2 for yellow fever, 4 for dysentery, and 18 for various other diseases. Of 82 European non-officials invalided 19 were for malaria, 13 for blackwater fever, 7 for dysentery, 5 for anæmia, 2 for gastritis, and 36 for various other diseases. The total number of Europeans coming under treatment was 1179, as compared with 1004 in 1912. No means exist whereby accurate statistics relating to the health of natives can be obtained. The returns show, however, that the number of attendances for hospital and dispensary treatment was 26,661, or 697 more than in the previous year. Treatment was given for 2565 cases of malaria, 2552 of parasitic diseases, and 853 of dysentery. In all, 49,491 cases were treated during 1913, of which 264 proved fatal, the figures for 1912 being 46,234 and 257 respectively. With the exception of an outbreak of small-pox in the eastern province of the colony, in which 108 cases were treated (18 terminating fatally), the Gold Coast and its dependencies were free from any serious outbreak of epidemic disease during the year. 61 cases of sleeping sickness were reported during the year, 15 of which terminated fatally. A new hospital for Europeans is now under construction at Accra. The sanitary conditions of the Colony, Ashanti, and the Northern Territories show generally an improvement, especially in the more populous centres. In addition to other works, 12,861,215 square yards of vegetation were cleared during the year; 607 pools or excavations were filled; 265,701 square yards of marsh land were filled and drained, and 4771 drains and 16,289 pools were treated with crude petroleum. A sum of £3204 was spent during the year on sleeping sickness preventive measures and £1552 on yellow fever preventive measures. The climate, though hot and damp, is cooler than that of most tropical countries situated in similar latitudes. The Gold Coast, owing to the prevalence in the past of mosquito-borne diseases, has gained for itself an evil reputation, but the steady progress being made in tropical medicine and hygiene and the great amount of useful work carried out on the spot by the medical and sanitary authorities are gradually redeeming its character.

THE WISCONSIN STATE MARRIAGE LAW.

ON Jan. 1st, 1914, a law passed by the State of Wisconsin the preceding year, and requiring examination by the application of the recognised clinical and laboratory tests for freedom from acquired venereal disease in the case of all male applicants for a marriage licence, came into force. On June 17th judgment was given in a test case as to its validity. The principal point on which discussion turned was whether the wording of the Act called for the application of the Wassermann test, because, if so, few medical men had the required equipment or skill, and the statutory fee of $3 was inadequate. The court held (three to two) that the law did not require this test, but only such physical examination and tests for venereal disease as were within the competence of the ordinary general practitioner and his equipment.

A VERY useful statement of the causes of the war and of what it means to Great Britain is given in a little pamphlet entitled "One Clear Call," by Henry Allen Ashton, published at the price of 1*d.* by the Voluntary Publishing Association, Empire House, Piccadilly. It is intended to stimulate recruiting by showing the vital nature of the issues at stake and the imperative need for the services of every available man. The profits, if any, of the sale are to be devoted to the furtherance of recruiting.

Messrs. Pearson's Antiseptic Co., Limited, of Elm-street, London, W.C., announce that soon after the war commenced they were asked by the Admiralty to tender for supplies of a disinfectant fluid of a similar character to German-made Lysol. They submitted a sample of their Pacolol fluid, which has been adopted by the Admiralty for use in His Majesty's medical establishments.

Messrs. Hommel's Hæmatogen, of 36, St. Andrew's-hill, Doctors' Commons, E.C., contradict a statement which has been made that they are a German firm. Their Hæmatogen is made in Switzerland by Swiss proprietors, and a continuous supply is reaching this country.

Jeyes' Sanitary Compounds Co., Limited, of 64, Cannon-street, London, E.C., the manufacturers of the soluble fluid Jeysol, wish to make it known that they are an absolutely British firm and hold Government contracts.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 21st, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 15	30 022	N.E.	0·11	81	61	52	54	54	Raining
,, 16	30·146	N.E.	...	85	60	53	53	54	Overcast
,, 17	30·186	N.E.	...	75	57	52	49	52	Cloudy
,, 18	30·190	N.E.	...	77	55	49	50	53	Cloudy
,, 19	30·304	N.E.	...	87	59	47	47	48	Overcast
,, 20	30·210	N.E.	...	74	56	48	48	51	Fine
,, 21	29 932	N.E.	...	75	56	47	47	48	Fine

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

FRIDAY.

OCCASIONAL LECTURE, TO FELLOWS: at 5 P.M.

In the Robert Barnes Hall.

Professor J. C. Bose, C.S.I., C.I.E., D.Sc. (Calcutta University), will give a demonstration on the Modification of Response in Plants under the Action of Drugs.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Discussion on the Operative Treatment of Tumours of the Cæcum and Colon—especially in Relation to Immediate Resection, Colostomy combined with Secondary Resection, and Short Circuiting (introduced by Mr. H. J. Waring, Mr. J. Sherren, and Mr. E. M. Corner). Exhibition of Specimens.

HUNTERIAN SOCIETY, Barbers' Hall, Monkwell-street, E.C.

WEDNESDAY.—4.30 P.M., Presidential Address:—Dr. T. G. Lyon: The Barber-Surgeons and the Medical Profession. (Illustrated by an exhibition of objects of interest belonging to the Worshipful Company of Barbers.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Museum Demonstrations for Advanced Students and Medical Practitioners:—

MONDAY.—5 P.M., Mr. S. G. Shattock: Specimens illustrating Tuberculosis.

WEDNESDAY.—5.30 P.M., Mr. J. F. Colyer: Specimens of Dento-alveolar Abscess and Dental Cyst.

FRIDAY.—5 P.M., Prof. A. Keith: Gunshot Injuries of the Thorax and Abdomen.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Eye Department.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12 noon, Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics X Rays. Mr. Pardoe: Operations.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Lecture:—Dr. J. Taylor: Clinical Cases.

FRIDAY.—3.30 P.M., Lecture:—Dr. J. Taylor: Clinical Cases.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. K. Sibley: Alopecia.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Lichen and Lichenification.

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

THURSDAY.—ANCOATS HOSPITAL, Mill street.—4.30 P.M., Dr. C. E. Lea: Myasthenia Gravis.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: Abnormal Presentations. 11 A.M., Examination of Patients and Minor Operations.

TUESDAY.—10 A.M., Major Operations.

WEDNESDAY.—10 A.M., Obstetrical Lecture: Abnormal Presentations (continued). 11 A.M., Examination of Patients and Minor Operations.

THURSDAY.—10 A.M., Major Operations.

FRIDAY.—10 A.M., Gynæcological Lecture: Anatomy of the Uterus. 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—MESSRS. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

The following magazines, journals, &c. have been received:— Medical Chronicle, British Dental Journal, Birmingham Medical Review, Journal of Comparative Pathology and Therapeutics, Knowledge, Journal of Pathology and Bacteriology, Canadian Medical Association Journal, Canadian Journal of Medicine and Surgery, Pharmaceutical Journal, Pediatrics, Transactions of the Society of Tropical Medicine and Hygiene, Symons's Meteorological Magazine, Tropical Diseases Bulletin, British Journal of Dental Science, Midland Medical Journal, West London Medical Journal, St. Paul Medical Journal, Albany Medical Annals, Medical Review of Reviews, Dublin Journal of Medical Science, Calcutta Medical Journal, Journal of Anatomy and Physiology, Indian Medical Record, American Journal of Surgery, American Journal of Roentgenology, American Journal of Obstetrics.

Communications, Letters, &c., have been received from—

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The Harveian Oration

ON

ADVANCES IN KNOWLEDGE REGARDING THE CIRCULATION AND ATTRIBUTES OF THE BLOOD SINCE HARVEY'S TIME.

"For the Life of all Flesh is the Blood Thereof."

Delivered before the Royal College of Physicians of London on Oct. 19th, 1914.

By Sir RICHARD DOUGLAS POWELL, Bart., K.C.V.O., M.D., F.R.C.P., LL.D.,

PHYSICIAN IN ORDINARY TO THE KING; CONSULTING PHYSICIAN TO THE MIDDLESEX HOSPITAL AND THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON, ETC.

(Concluded from p. 984.)

Attributes of the Blood.

Harvey's life work was the demonstration of the circulation of the blood. He could speak and speculate only generally as to the composition of the blood itself. He recognises the blood as the medium in which "the life" dwells, as "the generative part, the foundation of life, the first to live, the last to die, and the primary seat of the soul" (or vital principle). He goes beyond Aristotle, whom he quotes as saying that "the blood is that alone which lives and is possessed of heat whilst life continues," and lays emphasis upon the fact that it "is the prime part that is engendered and the heart the mere organ destined for its circulation." He holds it also as primary to the vessels which are constructed to contain it. Harvey's views were thus, as we should expect, thoroughly sound so far as they could go, and, as we may see, he makes some shrewd speculations and divinations on the more subtle functions of the blood which could not be plain to him. I will endeavour very briefly to refer to the cardinal discoveries respecting the blood which have come to light since Harvey's time. Within half a century the red corpuscles were recognised and described by Malpighi, followed in more detail by Leeuenhoek.

Oxygenation.

In 1668, three centuries after saltpetre had been utilised in explosive combination for the destruction of human life, Mayow recognised "nitre air" as the essential agent of slower combustion, and its activity in respiration and other processes in the body. "The function of breathing," says Mayow, "is merely to bring air in contact with the blood to which it gives up its nitro-aerian constituent and from which it carries off the vapours produced by the heating of the blood." Again, "The blood carries the nitro-aerian constituents to the muscles (including the heart), and their motion results from the chemical reaction in the muscle with the combustible matter contained therein." The view thus expressed by Mayow nearly two and a half centuries ago may be said to epitomise what we now know of the oxidation side of the respiratory function, and was further confirmed by Boyle in 1670, who demonstrated that the presence of air was necessary for the existence of both land animals and water animals. Although the existence of oxygen was thus predicated by Mayow and Boyle, and especially by Mayow, as necessary to life, it was not actually isolated until a century later by Priestley (1774).

The fact that oxygen forms a loose but definite combination with the hæmoglobin of the red corpuscles, and the further important fact that carbon monoxide has a preferential attraction for the hæmoglobin, and forms a more stable combination with it, are discoveries of great importance in elucidating the processes of respiration both in the lungs and in the tissues, especially the muscular tissues.

The most recent observations of Haldane and Priestley, Loewy, Zuntz, and others upon the composition of alveolar air and of venous blood, especially as regards oxygen and carbon dioxide, bring the matter up to date, showing: (1) that whilst normal arterial blood as it flows away from the lungs is within 1 volume per cent. of being completely saturated with oxygen (19 c.c. oxygen to 100 c.c. of blood); (2) after passing through the systemic capillaries the oxygen is reduced to 12 volumes per cent. (3) In venous blood the tension or pressure of the two gases O and CO_2 has been estimated by Loewy and von Schrötter as 5·3 per cent. of an atmosphere (37·6 mm. Hg) for oxygen and 6 per cent. (42·6 mm.) for CO_2 respectively. In arterial blood the tension of oxygen is about 100 mm. Hg (or 15 per cent. of an atmosphere) (Howell), that of CO_2 5 per cent. of an atmosphere (35 mm. Hg.) (4) In the tissues the relative tension of oxygen and CO_2 is for oxygen *nil*, for CO_2 50 to 70 mm. Hg. (5) The oxygen is so loosely combined as oxyhæmoglobin and so readily displaced by CO_2 that practically these gases follow the law of diffusion through membranes.

It thus becomes evident that, coincidently with the circulation of the blood, there is a respiratory circuit in lungs and tissues of the gases it contains, oxygen entering the blood at the lungs and permeating the capillaries into the tissues; CO_2 entering the blood at the tissues and permeating the pulmonary capillaries of the alveoli. The respiratory process commences in the lungs and is completed in the tissues, the remnant of oxygen returning with the venous blood being replenished in the lungs, and the carbonic acid accumulated from tissue changes escaping through the lungs to gather again as the blood reaches the tissues through the systemic capillaries, the whole function being under the watchful regulation of the medullary nerve centre. The picture only differs in its more exact detail from that so ably sketched by Mayow 250 years ago.

The presence of oxygen and nitrogen in the blood plasma is but of slight collateral importance except in morbid conditions such as those found in caisson disease both in compression and decompression.

Coagulation.

The coagulation of the blood was a phenomenon familiar to physicians from all time, and innumerable observations were made on the characters of the clot resulting from venesection and what they might portend. In alluding to the phenomena observed we must bear in mind that all the earlier and much of the later observations relate to inanimate or shed blood, or *gore*, as Harvey brusquely speaks of it.

In 1770 William Hewson, a junior contemporary and for a time a co-lecturer with William and John Hunter, made some remarkable observations on the coagulation of the blood, recognising that it was due to changes in the plasma, was prevented by some action of the vessel wall, and that outside the body it was also prevented by the presence of a neutral salt (sulphate of soda). It was Schmidt, however, who in 1861 laid the foundation of the modern theories of coagulation by isolating fibrinogen and by the discovery of the fibrin "ferment" to which the name of thrombin was afterwards applied. Hammarsten confirmed and extended his observations, which were importantly added to by the discovery by Arthus and Pages that calcium salts played an important part in the coagulating process.

Thrombin is not naturally present in the blood, but is evoked by the action of calcium salts upon an inactive precursor called prothrombin or thrombogen. Whether thrombogen exists naturally in the blood is also questioned. The theory of coagulation accepted by Professor Halliburton is that thrombogen is a substance existing in the blood plasma which in association with an activating agent called thrombokinase (which does not pre-exist but is derived from the platelets, red corpuscles, and tissue elements) and in the presence of calcium salts is converted into the active enzyme or ferment. The thrombin thus produced reacts upon a protein substance, fibrinogen, which is present normally in the blood plasma and transforms it into the insoluble, stringy material, fibrin, which entangles the other elements of the blood to produce a clot. It is assumed that for the production of thrombokinase some disintegration of the platelets is necessary, or that it is washed in the flow of blood from the tissues. These observations, complex as they are and by no means as yet fully accepted, apply, let me repeat, to inanimate blood after it has left the vessels. They also apply with some reservations to the formation of post-mortem clots in the heart and great vessels.

It was observed by Wooldridge in 1886 that thrombin as prepared by Schmidt when introduced intravenously does not produce coagulation. This little difficulty has, however, been met by the supposition that the thrombin is neutralised by an antithrombin circulating in the blood. The nucleoproteins of tissue extracts which coagulate the living blood are supposed to do so by the thrombokinase they contain, but Wooldridge has shown that a larger quantity of the same extracts causes the blood to become less coagulable.

Intravascular Thrombosis.

The coagulation of living blood to form a thrombus in a vessel is a somewhat different process of which the formation of fibrin is a comparatively late phase. An accumulation and adhesion of platelets seems to be the first thing that happens at a portion of an artery or vein which from injury or disease, usually of an infective nature, excites the coagulation. Almost immediately leucocytes collect in the mass followed by fibrinous formation which penetrates the whole, entangling red corpuscles and other elements of the blood. Whether this formation of fibrin is the result of the reaction of platelets or white cell secretion upon fibrinogen does not seem to be settled, but both appear probable. More purely fibrinous clotting of the blood may be observed within the vessels over roughened surfaces and inflammatory areas. Pure leucocytes may collect to block small vessels. Again, under certain toxic conditions the red corpuscles may adhere to form thrombi, occluding small vessels.

The mode of extension, absorption and organisation of thrombi has been fully established. The initial reason for the occurrence of a thrombus is much more obscure. It would seem that slowing of the current of the blood tends to the accumulation of platelets which normally occupy the centre of the current to the sides in the outer and comparatively still zone of the stream, and the same is known to hold with regard to the white cells. It still requires a broken or a diseased inflammatory or degenerated surface of the vessel to attract the accumulation of platelets and corpuscles, and the ultimate formation of fibrin to form the thrombus. The so-called inflammatory thrombi, whether originating in phlebitis or arteritis, are now recognised as of infective origin, associated with such diseases as rheumatic fever, influenza, enteric fever, and the like.

It would thus appear that intravascular thrombosis is a vital and not a chemical or fermentative process such as obtains in inanimate blood. It is more like the reaction of a tissue to heal a breach of surface. The thrombokinase reaction resulting in thrombosis and the formation of fibrinous layers and reticula are secondary occurrences, although of great importance in building and consolidating the thrombotic mass. In due time the thrombus degenerates, is absorbed, or rather consumed in its effete parts by phagocytic action, whilst from the vessel side it is becoming organised by the penetration of new vessels. Like many vital attempts at repair, the process has its inconveniences and dangers, but in the closing of severed or ligatured vessels and the occlusion and consolidation of aneurysms we find its value, whilst the immediate isolation of a morbid spot in the vessel by the formation of a protective clot must be of importance in preventing general blood contamination.

In septic thrombi a new element is introduced which need not be discussed here. Given a breach of surface—e.g., a degenerated aorta or cardiac valve—and the presence in the blood of bacterial organisms derived from infected surfaces—colon, bladder, gums—or absorption from without, and there is now no mystery to be explained in the occurrence of infective thrombosis from the lodgment of such organisms on unprotected surfaces.[1]

Dr. Senhouse Kirkes[2] first drew attention in 1852 to embolism or blocking of the vessels from fibrinous clots conveyed from the right or left cavities of the heart to the lungs and systemic organs respectively. And further developments of the observations have been far-reaching in pathology and clinical medicine.

COÖRDINATIVE ATTRIBUTES OF THE BLOOD.

In the fertilised protoplasm in which animal life has its beginnings there is a coördination of the formative, digestive, circulatory, and sentient functions under the ægis of nervous activation—if I may apply so modern a term to so old a service—that maintains the autonomous individuality of the organism. This coördination of process is sometimes spoken of as a species of chemiotaxis, using the term in its widest sense. In the course of evolution and in that brief epitome of it that proceeds *in utero* in the more advanced types of animal life separate organs representing each function are gradually differentiated. The same correlation of function, however, must still be maintained, and the *consensus partium*, as it has happily been expressed, by which this correlation is preserved under conditions of greater elaboration is effected through the medium of the circulation by means inconceivable at the time of its great discoverer, but still, as in the primitive plan, under the control of the nervous system. The principle of every cell being an individual organism was instilled into my mind in my earliest student days by a remarkable man, Professor Grant, of University College, who held the chair of comparative anatomy in the middle third of the last century. In 1846 Wharton Jones, another pioneer of blood biology now forgotten, had discovered the amœboid movements of the white cells in fishes, and Davine soon afterwards found the same in human blood.

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[1] Professor Welch's account of Thrombosis in Vol. VI. of Allbutt and Rolleston's System of Medicine is the most lucid and comprehensive, and although five years old, as yet, I believe, requires no material modification.

[2] Transactions of the Royal Medical and Chirurgical Society, vol. xxxv.

Many years before the doctrines of cellular pathology of Virchow, of the wandering cells of Cohnheim and their phagocytic function as discovered by Metchnikoff were under discussion, Professor Grant thus interested the young minds of the few who would attend his class in the cells of the blood. He pointed out that they were, as the other cells of the body, living entities, carried here and there in the highways and byways of the liquid tissue of which they formed a part; that each cell earned its own livelihood within the limits of its environment, absorbing its own nourishment and secreting its own products; and that, moreover, these cells were, like Autolycus, "snappers up of unconsidered trifles," such as may be effete and strange in the vital stream—flotsam and jetsam of the tissues, or foreign bodies introduced from without.

These two conceptions—(1) that the blood is a liquid tissue the formed elements of which have their own autonomous vitality, and (2) that it is the chief means by which the *consensus partium*, so simple in the protoplasmic organism, is maintained in all the future complex developments of that organism—may be regarded as the main principles which underlay all the discoveries established by the brilliant researches of modern observers in the vital chemistry and biology of the blood. *Phagocytosis* is perhaps the factor around which the processes illustrative of the first principle centre; *internal* secretion that by which the second principle is best illustrated.

I can do little more than enumerate these discoveries. I cannot even name—except here and there—the workers who have brought them about; they are all well known and for the most part still living amongst us, many of them Fellows of this College, still searching out the secrets of nature by way of experiment in the topmost branches of the tree of knowledge rooted in Harvey's discovery. Some have suffered, but, like Harvey, have outlived the obloquy cast at them by ignorance and slander.

CHEMICAL ATTRIBUTES OF THE BLOOD.

The structure and function of the blood is a subject too vast to be touched upon save in a very elementary manner. It is a tissue of which the cellular elements, as with other tissues, are beings with their appetites and antipathies, earning their living "on their own" in their plasmic environment; the difference being that the environment of the blood cells is liquid, a vital, an ever-flowing stream, whilst the cells of the fixed tissues are dependent upon such portions of the plasma as are conveyed to them by the vessels of their connecting framework.

The blood thus contributes to and partakes of all organic function, and in the composition of its plasma there have been recognised, identified, and isolated—(1) substances called proteins destined for the body nutrition; (2) products of metabolism *en route* for removal; (3) salts which attend and facilitate both processes; and (4) certain other substances, neutral bodies, ferments, opsonins, antibodies, too numerous to speak of individually, some of which, as fibrinogen, can be identified and isolated; others—the opsonins, the antibodies, and some of the ferments—are discoverable only by their effects, some of them somewhat supposititious, like the meat-roasting quality in a jack, humorously alluded to by our quondam Fellow, Arbuthnot, in his amusing skit on the learned disquisitions of his time respecting the seat of the soul.

Harvey's tribute to the blood as the very essence of life is thus scarcely exaggerated; it is the tissue which has relations with every other tissue and process in the body by virtue of its fluidity and the pressure of its penetration. It gives and receives, and yet in health is ever the same. Its intimate concern in all the relations of life may be further revealed in the additional features I have yet very briefly to mention.

The whole subject of the chemical reactions of the blood and the means by which the uniformity of its reaction and quality are maintained has been most recently and fully discussed by Dr. F. Gowland Hopkins in the Oliver-Sharpey lectures of this year.[3] Its uniform reaction under the imbibition of large quantities of acid and alkaline fluids and acid and alkaline-producing foods is as truly remarkable as its constant temperature in health. It is suggested that whilst the lungs are chiefly concerned in controlling the hydrogen ions due to carbonic acid, the kidneys are concerned with those due to other acids, chiefly lactic acid, formed in the muscles, with the result that the mean reaction of the blood is normally adjusted with great exactness.

Cholesterin is an important constituent of the blood, or rather an important agent circulating in it intimately concerned with cell life, which is now recognised as an essential and vivifying constituent of all cells. Its presence in the blood plasma may be only *en route* to its destiny in cell formation. With the disintegration of cells which takes place largely in the liver their cholesterin is set free to be reabsorbed and utilised in the generation of new cells.

Many of the ferments discovered—mainly by their effects—in the blood may perhaps be regarded, somewhat crudely from a physician's point of view, as to some extent contaminative, having their source as overflows from organic function (especially of the digestive cells) and of little or no importance in the vital mechanism, unless they should be in excess from accumulation owing to defective elimination when they act as poisons.

Abderhalden draws attention to the protective action of certain ferments in defending the body from the injurious effects of organisms and chemical substances which are foreign or "disharmonious" to the blood and tissues. He finds that the introduction into the blood of disharmonious substances results in the appearance of ferments which were not previously present, but which possess the property of breaking down the foreign substances into simpler bodies with which the cells are accustomed to deal. He regards such ferments as modifications of the normal metabolic processes of the cells of the tissues or blood, and would thus seem to sanction the view I have been advocating that the cells of the body are equipped for their own defence as well as their own nutrition, and may be principally concerned in the secretion of "opsonins" and "antibodies" appropriate to their needs. The first and second lines of defence provided by the gastro-intestinal and hepatic cells are described by Abderhalden, and the plasma derives from the tissue and blood cells the ferments required for further dealing with disharmonious intruders and rendering them so far disorganised as to be amenable to phagocytic action.

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[3] THE LANCET, June 6th (p. 1589) and 13th (p. 1661), 1914.

Abderhalden pushes his argument to the formulation of a diagnosis of pregnancy, carcinoma, and some other diseases by the recognition in the blood of ferments antagonistic to the proteins yielded by the placenta and carcinomatous growths respectively. No doubt his work will be subjected to careful scrutiny and will stimulate new researches. The question of the production of antibodies to meet other extrinsic infections he has not discussed.

INTERNAL SECRETION.

With the recognition of the fact that nearly every glandular organ in addition to its proper secretion discharged through its duct yields also to the blood a secondary secretion peculiar to itself, a large field of interest and inquiry has been opened up to physiologists and many previously obscure phenomena have become more clear to physicians. Herein may be found an illustration and perhaps an explanation of the correlation of organic function which has been spoken of as the *consensus partium*, through the messages—mostly chemical—communicated by each organ to the controlling nerve centres; in a word, the "chemiotaxis" of the embryonic germ is maintained through the medium of the blood between differentiated and distant organs.

Professor Berthold, of Göttingen, in 1849, first showed the existence in the testicle of this second function of contributing of its essence to the blood, and it was Claude Bernard who in 1855 first applied the term "internal secretion." But Brown-Séquard's experiments upon the testicular internal secretion gave the impetus to all the physiological and therapeutic work that has followed. Brown-Séquard's experiments (1889) and the therapeutic measures to which they pointed led to false hopes and to abuses of an unworthy kind which for a time brought some discredit upon them. Their value in the treatment of premature senility, climacteric disturbances, and of some mental ailments was in a measure established, though with exaggeration, but their chief importance rested upon the further researches they initiated with regard to generative and other glands. The therapeutic measures they instigated are used extensively, though somewhat surreptitiously, at the present day.

Investigations on the Ductless Glands.

The ductless glands were the first objects of this further inquiry, and in rapid succession there appeared important results from the physiological experiments and clinical observations of Schiff, Sir W. Gull, Miller Ord, Kocher, Victor Horsley, and others upon the function of the thyroid gland and the parathyroids. In 1856 Schiff showed that the thyroid gland was essential to life. In 1873 Sir W. Gull described the condition which he named the "cretinoid state in adult life in women," which was further studied by Dr. Ord, who more fully described the clinical features of the disease, which he named myxœdema and associated with atrophous conditions of the thyroid gland. A swelling of the gland of a peculiar kind had long been associated with exophthalmic goitre, and in 1882 Reverdin and Kocher discovered that the removal of the gland for this disease resulted in symptoms described as those of "cachexia strumipriva," which were of the nature of myxœdema. Similar symptoms were artificially produced in monkeys by the removal of the healthy gland, by Horsley in 1891. In the same year Dr. Murray, then of Newcastle, introduced the injection of thyroid extracts for the successful treatment of this disease, on the same principle as Brown-Séquard had used allied extracts for senile affections. Thus, and by further researches at other hands, the relations of myxœdema, cretinism, Graves's disease, and operative myxœdema or cachexia strumipriva to the thyroid gland have been fully established, and a new era of therapeutic treatment invaluable for the relief of human suffering has been opened up. More complex relations have been found in the internal secretions of the parathyroids to other organs, especially the pancreas.

The relation of thyroid essence taken up by the blood to cardiac innervation and to general metabolism is being carefully investigated, and has been so far established as to instigate various measures of therapeutic value.

Another great Guy's physician, Addison, first discovered (1855) the importance of the suprarenal glands and described the symptoms of a certain diseased condition of them which is known by his name. This discovery led to a chain of observations by Brown-Séquard, by Kölliker, and others until, in 1894, Schäfer and Oliver established the connexion between the suprarenal essence, and especially that of the medullary portion and blood pressure. Addison had recognised as a marked feature of his disease the notable depression in the pulse tension. Schäfer and Oliver discovered as a chief function of the suprarenal bodies the maintenance of blood pressure, and initiated an important and now well-known method of treating suprarenal disease and established the value of extracts derived from the gland as a sympathetic nerve stimulant. Further researches have shown that this extract especially affects circular organic muscle, including the heart and vessels, and there are many collateral effects still under investigation.

On similar lines interest attaches to the contribution of the pituitary body to the blood, its function in health, its effects under diseased conditions, and the therapeutic value of extracts derived from certain portions of it. The field of investigation has greatly widened, and the pancreas, the kidneys, the liver, and the gastro-intestinal cellular digestive tract have successively been found to yield not only their secretion into the ducts and channels with which they are properly connected, but a secondary internal secretion contributed to the blood.

Importance of Internal Secretions.

Professor Starling and Dr. Bayliss, to whose researches a large portion of our knowledge respecting the internal secretions of the digestive tract especially is due, have applied the term "hormone" to these secondary glandular products, and the term will probably soon be used to include all internal secretions. It is important to recognise Professor Starling's distinction of hormones from other materials or influences in the blood, such as antigens arising from toxins, ferments, &c., each with its corresponding antibody. Hormones readily pass through the capillary vessel walls, and, having effected their purpose, they undergo rapid destruction by oxidation or otherwise and are known no more. It may be the condition of greater simplicity of composition, lighter specific gravity, and greater diffusibility attributed to these chemical essences that cause these hormones to get into the blood, whilst the more obvious organic secretions escape through ducts to their destination.

It would be difficult to exaggerate the interest and importance of these hormonic contributions to the blood from the different organs and tissues. Quite unobservable in their course, they yet convey messages and instructions to the nerve centres leading to vaso-motory relaxation or constriction of the capillary areas whence they proceed. In this way they correlate and regulate growth and function, at the same time preserving that *consensus partium* so comparatively easy in the simple amœboid structure. Here is a great function of the circulation, undreamed of by Harvey, in distributing these agencies, which is as imperceptible to our unaided comprehension as are the infinity of living particles in the clear atmosphere until illumined by a sunbeam, or the thought waves teeming in a crowded assembly. By their effects only can we gauge them, and only by the deepest and most subtle researches—by experiment upon their effects—can we learn these secrets of nature.

> Strange is it, that our bloods,
> Of colour, weight, and heat, pour'd all together,
> Would quite confound distinction, yet stand off
> In differences so mighty.[4]

The mental side of these phenomena is of great but at present, for the most part, speculative interest to the psychologist, the alienist physician, and the criminologist. In the phenomena of hysteria and its border-line manifestations, of insanity and of criminal impulses, as well as in the controlled impulses that account for character and discipline, we may find interesting fields for the study of the effects of internal secretions as they here and there emerge to consciousness from their sphere of automatic action.

DEFENSIVE ATTRIBUTE OF THE BLOOD.

The last attribute of the blood is that of defence against attacks, mainly infective, upon the organism, an attribute which eventuates in the establishment of immunity to infective diseases. After the experience of an infective illness the blood becomes more tolerant of that particular poison, whilst its defensive forces are strengthened and the poison influence is weakened or altogether neutralised. Thus immunity arises.

The Establishment of Immunity.

The methods of blood defence and the modes by which immunity is established are still matters of considerable controversy, and the various views expounded are often expressed with a vocabulary which obscures rather than renders more clear the arguments of the disputants. There are, however, two main contentions or schools of opinion: the one with which Professor Ehrlich is perhaps most identified, which regards the bactericidal influence of the blood as chemical and residing in the plasma; the other, held by Metchnikoff and his followers, regarding it as resident primarily in the cell elements of the blood and of certain tissues. It has been shown, mainly by the work of Sir A. Wright, that (as in most controversies) the essentials of both views enter into the truth of the matter.

From my earliest training to recognise the predominance of cellular over liquid plasmic processes, I must confess a strong prejudice in favour of the opinion of Metchnikoff that the leucocytes of the blood chiefly, and perhaps the endothelial cells of blood-vessels and serous spaces and the cells of the tissues to a greater extent than he would admit, are the source of such agents, doubtless mainly chemical, as are found in the blood plasma as alexins, ferments, antibodies, immune bodies, opsonins, or what not. These agencies, by whatever name they may be known, reinforce the general qualities of the blood serum in the attack upon living and for the digestion of dead foreign bodies, which are then consumed by the phagocytic action of the leucocytes and the other cells named. On the other hand, bacterial and protozoic organisms on their side, with their infinite productivity and the secretions they yield, may well be conceived to be capable in many instances of overwhelming the defensive action they at first excite. This is how the matter crudely presents itself to the mind of an average physician after labouring through as best he can the intricate and wonderful work of those numerous bacteriologists who have cast such brilliant light on the intimate biochemical processes of the blood. It is also readily to be understood how the local introduction of minute quantities of "disharmonious" substances, such as bacterial toxins, may excite the production locally of antibodies the absorption of which into the general circulation will reinforce the defensive qualities of the serum. We must not forget, however, that it is a natural process of defence, a tendency to immunity, which is excited by all bacterial and protozoic infections, the exact nature of which it has been the primary object of all these brilliant researches to show, and that it is the observation and study of this natural process which has prompted the use of artificial measures for its assistance.

Vaccine Methods of Treatment.

The immunity gained by an attack of certain specific diseases against further assaults has long been known to physicians: how mild attacks of small-pox, whooping-cough, scarlet fever, dissection wounds, will protect, at least for a time, often the lifetime, from further attacks. Lady Mary Wortley Montagu and Edward Jenner were pioneers in interpreting rightly this natural lesson in immunity, and the exact inquiries of modern observers have thrown so much light upon the processes concerned as to have established on scientific lines vaccine methods of treatment in many acute specific diseases and of analogous methods in some chronic diseases. It was Pasteur who, in 1880, revived the question of immunity on experimental lines in his observations on chicken cholera, and suggested the possibility of establishing artificial immunity in certain diseases. Within the lifetime of the youngest here diphtheria, enteric fever, tetanus, and plague have lost half their terrors.

The applicability of knowledge gained respecting immunity processes is now being utilised in certain chronic infective diseases, notably tuberculosis and perhaps arthritis. All practical physicians have long been aware of the fact that an attack of tuberculosis or repeated attacks having resulted in a chronic passive fibroid lesion, the patient if able to endure such lesion without fresh assault for a certain time acquires a very considerable, even a permanent, degree of immunity, and may die in later life from disease of a quite different kind. It is now recognised that such patients acquire and perhaps retain their immunity through the absorption of successive doses of tuberculin taken up by the blood in its course through their passive or indolent lesions. They are in possession of an inoculate, a source of vaccine, in the remnants of quiescent morbid tissue left behind by the acute disease. Thus are they in a measure fortified against fresh infection. This view, which would seem to hold good with regard to tuberculosis and perhaps syphilis, may in a more subtle manner hold good also with regard to remnants left behind by the acute specific fevers, as so coarsely illustrated by the effect of inoculation in small-pox; such a hypothesis is at least interesting in bringing into line the doctrine of immunity with the phenomena of internal secretion already discussed.

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[4] All's Well that Ends Well, II., 3.

Advantage has been taken of this knowledge in the rational treatment of tuberculous patients by retarding or exciting the circulation through their lesions by regulated exercises. A warning must attend these observations—viz., that some of these people have their leucocytic functions sensitised by such autogenous stimulation, and are thereby rendered unduly excitable to further stimulation—they are anaphylactic—in a greater or less degree, and tuberculin inoculations are apt, unless given with the greatest caution as regards dosage and repetition, to induce a recurrence of negative phases or periods of paralysed resistance very inimical to the patient's prospects. I cannot say that I have ever observed tuberculin vaccine given three times a day after meals, after the manner of the Court physician in the "Doctor's Dilemma," but I have often seen it given on unsuitable occasions and in recklessly repeated doses in entire ignorance of the intimate history of the disease and with disastrous results. The necessity of a period of restful quietude after any administration of tuberculin is further emphasised by the above considerations.

Conclusion.

We have seen how heart and pulmonary mechanism are subordinate to the circulation of a vital stream which, so constant in all its physical aspects, so infinite in its attributes and adaptations, dominates all the functions of life. Might not Harvey quote Leviticus—"for the life of all flesh is the blood thereof"—with even greater conviction to-day?

I have yet, Mr. President, one duty to perform, and that is to exhort the Fellows and Members of the College to continue their endeavours for the advancement of the College in learning and general prosperity. It is impossible to record the numberless gifts to the College since Harvey's time; gifts of learning, gifts to the library, gifts of valuable and interesting documents relating to the College, gifts for research, gifts for hospitality. In the past year such gifts have been continued and were recorded in your address recently published. Harvey's further exhortation to the Fellows was that for the honour of the profession they should continue "in mutual love and affection amongst themselves, without which neither the dignity of the College can be preserved, nor yet particular men receive that benefit by their admission into the College which else they might expect, ever remembering that *Concordia res parvae crescunt, discordia dilabuntur.*"

I gratefully acknowledge the kind help I have received from my colleague Dr. R. A. Young in the literature, especially that relating to the blood; and also my great indebtedness to Miss E. Parry for much assistance in revising the proofs and in verifying the references, only a small fraction of which are annotated in the text.

TRAUMATIC TETANUS.

By M. H. GORDON, M.A., M.D., B.Sc. Oxon.,
ASSISTANT PATHOLOGIST TO ST. BARTHOLOMEW'S HOSPITAL.

The appearance of tetanus among those wounded during the recent fighting on the continent and the possibility of further cases seemed to make it desirable to look up the literature of this fortunately rare disease, and also to place on record any personal experience, however small, of its bacteriology. The following notes, incomplete though they necessarily are, may possibly be useful. I am encouraged to this course also by the fact that acting on a happy suggestion of Dr. J. H. Drysdale I have consulted the monograph on tetanus for which the late Professor A. A. Kanthack received the Jacksonian Prize in 1895. This essay is kept in the library of the Royal College of Surgeons of England, and consists of two volumes, the second of which contains a large number of original photographs and illustrations. I have found this essay of very great value not merely because it contains a review of the literature up to that date, but chiefly because it embodies the result of a year's original research on tetanus by Kanthack. Accordingly, I have drawn upon it largely in the following paper, as also upon the recent comprehensive reviews of Eisler and Lingelsheim.

Characters of the Disease.

Clinical diagnosis.—It is unnecessary to go into detail with regard to the classical symptoms of tetanus—trismus, rigidity of the muscles of the neck, opisthotonos, &c.—for they are unmistakable and thoroughly well known. It is of interest, however, to note that whereas in man and the horse, in whatever region the site of the superficial wound may be, the earliest muscles to be affected appear to be those of the neck and jaws, in other animals the disease generally begins as a local tetanus—i.e., the muscles nearest the site of inoculation are affected first, and the disease spreads from that point in a definite order. Sawamura, whose work is quite recent (1909), recognises three kinds of tetanus: tetanus ascendens, tetanus descendens, and mixed tetanus.

In tetanus ascendens the local muscles are affected first, next the tetanus spreads up the limb, then to the opposite limb, and finally up the trunk. This is the form commonest in experimental animals after subcutaneous or intramuscular injection. It is possible, however, that this type is not so rare in man as may be supposed. Witness the case of M. Nicolas, laboratory assistant to M. Courmont and M. Doyon, who accidentally introduced into his thenar eminence the point of a syringe which had just been used for the injection of an animal with tetanus toxin. Although he received only a trace of toxin, Nicolas, after an incubation period of four days, developed tetanus, and the contractures began in the inoculated hand, then spread up the arm and became generalised. After a severe attack lasting 41 days he recovered. This, therefore, was a case of ascending tetanus, and it is to be hoped that a sharp look out will be kept for any stiffness of the local muscles, for Sawamura has shown experimentally the great value of a local intraneural injection of antitoxin at this stage of the disease. Tetanus descendens appears to be the commonest form in man and the horse. The muscles of the jaw and neck are first affected, and then the disease spreads down the body. It is of graver significance than tetanus ascendens. In mixed tetanus both the above forms occur.

Prognosis.—There are few diseases in which we have such sure knowledge available for the purpose of prognosis. The patient's chance of life depends upon (1) the incubation period, (2) the rapidity of onset and severity of spasms, and (3) the duration of the disease. Of these points (1) is the most important and (2) comes next. In the words of Kanthack, "fatality is in direct proportion to rapidity of onset, and inversely proportional to the duration of the disease." It is perhaps permissible to illustrate this point by an example. Rose collected over 700 cases of tetanus. He found the mean mortality to be 88 per cent. Of those developing tetanus during the first week 91 per cent. died, during the second week 81 per cent., and during the third week 52 per cent. Richter and Poland, who also investigated this matter, have published similar figures. Richter has stated, by the way, that of 717 cases of tetanus contracted on the battlefield 80 per cent. died. In 1892 Rotter drew attention to the fact that tetanus cases with an incubation period of less than ten days are extremely severe, and Tilmann in 1907 emphasised the same point. Cases in which the march of the symptoms is rapid and the spasms severe are very fatal. As regards duration, it would seem that if the patient lives two days after the tetanic symptoms have begun, his chances of recovery are greatly improved. In this connexion it is of interest to recall the aphorism of Hippocrates: "Such persons as are seized with tetanus die within four days, or if they pass these they recover." This dictum would seem to be in the main true to-day, if a trifle optimistic.

As will be described later on, some of the virulent bacteria frequently associated with the tetanus bacillus in the wound have a way in certain cases of invading the patient even when the long range effects of the tetanus bacillus have abated.

The Bacteriology of Tetanus.

Isolation of B. tetani (a) from earth.—The cause of tetanus is a bacillus which Nicolaier found and described in 1884 in animals rendered tetanic by inoculation with particles of earth. On this subject Kanthack writes as follows:—

> In attempting to obtain it from earth we must first make sure that the sample of earth actually contains the tetanus micro-organism. This can be done only by means of animal experiments, mice lending themselves best for the purpose. If the mice become tetanic then we may proceed with the separation of the bacillus from the earth by suspending it in broth to which 1–5 per cent. carbolic has been added. Place these tubes now at 70–80° C. for one hour and then incubate them anaerobically at 37° C. Next day heat again, and on the third and fourth day again. It is by no means easy to separate the tetanus bacillus from soil; the ease with which it can be done seems to depend on the number of spores present. If the bacillus of malignant œdema is present plates must eventually be made, since this bacillus is both anaerobic and sporogenous.

(*b*) *From pus.*—In attempting to isolate B. tetani from mouse or man the pus or local scrapings are distributed in carbolised broth and treated in the same way as in the case of the earth. After the fourth day by means of a capillary pipette a number of grape sugar broth tubes are liberally inoculated and kept anaerobically in Buchner's tubes. After a few days the tubes must be examined microscopically, and if any contaminations are present the heating must be repeated until eventually we succeed in obtaining pure cultures. This is a certain method of obtaining the tetanus bacillus from pus or tissues containing it, provided no other sporing organisms are present which are also anaerobic. If such occur then we must plate out on formate agar or on glucose gelatin. The surface growth of a pure culture of B. tetani on ordinary peptone broth agar containing 0·5 per cent. of sodium formate shows up after 24 hours at 37° C. anaerobically as a series of small raised punctate transparent colonies. These colonies slowly increase in size, but always retain their transparency. This is important, for any distinctly opaque colony is almost invariably a contamination. So characteristic, says Kanthack, is the growth on formate agar that "I always use this culture to satisfy myself as to the purity of my stock material." Cultures of B. tetani in broth or gelatin maintain their vitality at room temperature for as long as six months.

The Bacteriological Diagnosis of Tetanus in Man.

(*a*) *By film preparations.*—Film preparations of the local pus have as a rule very little value for establishing the presence of B. tetani owing to the fact that this bacillus appears only sparsely in the local material and does not show up there in the characteristic drumstick shape, but chiefly occurs in the form of slender rods. Kitasato noticed that the bacillus disappears locally, and Vaillard and Vincent demonstrated that there was no appreciable multiplication, and that even in fatal cases local films might fail to show the presence of the tetanus bacillus so soon as 14 hours after inoculation. The value of film preparations, therefore, in man is mainly to see if a mixture of organisms is present suggestive of earth infection. Tetanus cases are probably in all cases primarily a spore infection. Besides streptococci or staphylococci, coliform bacilli may be found in the wound, and in the worst cases the well-known large Gram-positive anaerobic spore-bearing bacillus associated with emphysematous cellulitis is present.

(*b*) *By culture.*—Vaillard and Vincent ascertained that, in spite of the local rarity of the tetanus bacillus in films, it could always be recovered locally by culture in the case of animals that subsequently developed tetanus. It would appear advisable, therefore, to make attempts to isolate the tetanus bacillus by culture in cases where the presence of the micro-organism is suspected or proved. An even more certain way, however, and a much quicker one in the present state of our knowledge, is to inoculate a mouse with material from the wound. In positive cases the mouse becomes tetanic within three days; though it would appear that the disease cannot be indefinitely transmitted from mouse to mouse by inoculation with their local pus; after the third transference the disease may fail to pass.

The Importance of the Associated Bacteria in Human Cases of Tetanus.

As long ago as 1891 Vaillard and Vincent showed that when freed of adhering toxin either by washing or by heat neither B. tetani nor its spores produced tetanus in animals by simple inoculation. They found, however, that the toxin-free bacillus or spore could produce the disease if they bruised the tissues locally by pinching them with a forceps, also if they simultaneously injected either lactic acid or another micro-organism, such as B. prodigiosus or even its filtrate. These experiments are generally held to show the importance of bruising and also of a mixed infection in the genesis of tetanus. There is reason for doubting, however, if it is even now clearly realised how very important the associated bacteria may be. It has been stated before that the commonest cause of tetanus is infection of a wound with earth, and this, of course, always contains a variety of bacteria and spores. The earth of chief repute for producing tetanus is that soiled with the manure of horses and cattle. It is of interest in this connexion to note that while tetanus was found by Pizzini to be present in human fæces in 5 per cent. of the cases examined by him it was found by Sanchez Toledo and Veillon to be present in the excrement of cattle in 50 per cent. of the cases. Now the dung of horses and cattle, as also of man, constantly contains a large Gram-positive anaerobic spore-forming bacillus in very considerable numbers, and owing to its abundance in horses' excrement this same micro-organism is constantly present in street dust. On inoculation subcutaneously into animals the microbe in question produces a spreading emphysematous cellulitis quickly followed by death from septicæmia. This micro-organism or varieties of it are known by a plurality of names —e.g., vibrion septique of Pasteur, B. aerogenes capsulatus of Welch, B. enteritidis sporogenes, and B. perfringens. Spores of it are constantly present in large numbers in street dust, and quite a considerable proportion of cases of street accidents in which there is much laceration of the skin and subcutaneous tissues succumb to infection with this micro-organism. Now the point which I wish to emphasise is this. In three out of the four fatal cases of tetanus which I have had the opportunity of examining both before and after death at St. Bartholomew's Hospital during the past three years this bacillus of Welch was present in the local pus during life. In two of these fatal cases of tetanus the heart's blood of the patient contained the bacillus of Welch in pure culture and in very large numbers. In the first of these cases, a gardener, aged 27 years, with crushed fingers, the incubation period of his tetanus was 16 days; the tetanus disappeared after intracerebral injection of tetanus antitoxin, but in spite of the removal of his crushed fingers and the abatement of his tetanus an emphysematous cellulitis spread up his arm and he died on the fifth day from the onset. Death in this case was, I feel certain, due to Welch's bacillus. In the next case, a female aged 52 years, who fell out of a cart on a country road as the result of being run into by a motor-car, and sustained a compound fracture of her right radius and ulna, the incubation period of the tetanus was six days; the degree, however, was not intense. The patient died at the twenty-seventh hour, and I have personally little doubt that the septicæmia from Welch's bacillus, proved at the post-mortem examination, was the chief cause of her death. In the third case, a labourer aged 18 years, who ran a pitchfork into his foot, the incubation period was seven days, and the duration of life after tetanic symptoms began four days. Here the local pus showed streptococcus only as the associated micro-organism, but post mortem this streptococcus was found to be present in large numbers in the heart's blood. In the fourth case, a boy aged 10 years, with a compound fracture of his tibia and fibula sustained in a street accident, the onset of tetanus was on the sixth day; the spasms were very severe, and he succumbed within 24 hours. Welch's bacillus was present in the local pus, but this patient's heart's blood was sterile.

This personal experience of tetanus, therefore, limited though it is, has led me to attribute a very important rôle to the associated bacteria, particularly in fatal cases. It seems probable that the explanation of the difference in prognosis according to the length of the incubation period to which reference has been made is directly due to the association of B. tetani with other virulent bacteria of which the most important is the anaerobic bacillus of Welch. The bearing of this observation upon the rational treatment of tetanus will be discussed later.

Tetanus Toxin.

When Nicolaier discovered the tetanus bacillus at the site of inoculation in his tetanic animals and found that it did not become generalised throughout the tissues he suggested that this microbe was capable of secreting *in loco* a soluble poison the diffusion of which gave rise to the symptoms. The correctness of this view was proved in 1890 by Knud Faber, who showed that the bacterial-free filtrate obtained from a broth culture of B. tetani was capable of producing all the symptoms of tetanus. Since that date a very large amount of work has been done on tetanus toxin, which appears to be the most poisonous substance at present known. Hallock Park brings this point out by the following figures quoted from Lambert. It is computed that the fatal dose of concentrated dried toxin for a man of 75 kilogrammes would be 0·23 milligramme. As the fatal dose of dried cholera venom would be 4·38 milligrammes (Calmette), of strychnine 30–100 milligrammes, and of anhydrous prussic acid 54 milligrammes, the appalling strength of tetanus toxin can readily be appreciated. Tetanus toxin is readily soluble in water, is precipitated from the broth by alcohol, and is not dialysable. It is destroyed by exposure to 60° C. for 20 minutes, or to 65° C. for five minutes, and is attenuated by exposure to light and air at the room temperature. It does not appear to be harmed by the addition of 0·5 per cent. carbolic acid, which is sometimes added to it as a preservative. A destructive action, however, is exercised upon the toxin by iodine trichloride, by hydrogen peroxide, by potassium permanganate, or by organic oxidases extracted from the liver, spleen, or kidney. Tetanus toxin has been shown by Ehrlich to contain a hæmolysin as well as its more important constituent, tetanospasmin.

Path of the Toxin.

The *modus operandi* of tetanus toxin upon the central nervous system has possessed a great fascination for the experimental mind. At first it was suggested that the toxin merely increased irritability of the reflex arc, but Autokratow in 1892, and later Gumprecht, disposed of this view by showing that section of the posterior roots of the nerves supplying one limb failed to prevent the appearance of tetanus in that extremity. This experiment proved that tetanus toxin was a direct motor poison. Marie, however, in 1897 appears to have been the first actually to demonstrate that tetanus toxin was absorbed and carried from the site of inoculation by the local nerve trunks. One of the most convincing experiments establishing this neural conductivity of the toxin is that of Meyer and Ransom, who showed that the minimal lethal dose of toxin for an experimental animal is less when injected intraneurally than when given intramuscularly. In 1898 Wassermann and Takaki published their classical experiment showing that tetanus toxin when brought in contact with an emulsion of normal brain in suitable proportions *in vitro* becomes inactivated, and that an emulsion of cord has the same capacity, though to a less degree, while emulsions of other organs have no such value. This toxin-binding capacity appears to pertain to the grey matter rather than to the white, and emulsions of cortex are more active than those of the basal ganglia. When the emulsion is boiled it loses its activity, and the chemistry of the reaction does not yet appear to have been worked out. Interesting though this demonstration of the specific affinity *in vitro* between the cortical nerve cells and tetanus toxin be, the fact must not be lost sight of that (as Roux and Borrel showed) the injection of tetanus toxin directly into the brain of a living animal is followed by remarkable psychical changes, epileptiform and tetanic convulsions, polyuria, and death. Thus while an emulsion of cortical cells absorbs tetanus toxin *in vitro*, the whole brain of the animal fails to protect it *in vivo*.

Marie, moreover, found that the subcutaneous injection of cerebral emulsion failed to protect a living animal against tetanus toxin. Intimate contact, therefore, between the nervous elements and the toxin is indispensable for the success of the binding phenomenon. To return, however, to the path of the toxin. In 1901 H. Meyer showed that it was possible to recover tetanus toxin from the local peripheral nerve supplying the part infected. In 1902 Marie and Morax published a brilliant piece of experimental work in which they proved that tetanus toxin travels upwards to the central nervous system not so much by capillaries of the nerve trunks as by the axis cylinder and its peripheral terminations. They found, further, that while the toxin flows upwards in the axis cylinders to the nerve cells in the cord, it does not flow in the reverse direction—in other words, there is only a centripetal flow. The experimental work of Meyer and Ransom also indicated this path of the toxin *viâ* the axis cylinder process. Once again, however, it must be borne in mind that the nerves are not the sole route by which tetanus toxin can be absorbed. This is forcibly shown by an experiment of Sawamura, who found that where a fourfold fatal dose of toxin (as estimated by intramuscular injection) was injected into the muscles of the hind leg of a rabbit, tetanus ascendens invariably followed; whereas when this same dose was injected into the tip of the toe of the animal, not tetanus ascendens, but tetanus descendens was produced. The explanation which Sawamura gives is that in the first case the toxin is rapidly absorbed by the numerous nerve endings in the muscle, runs up the axis cylinders to the motor cells in the cord, and produces first a local tetanus, then a tetanus ascendens; whereas in the tip of the toe, which is a muscle-free region, the toxin is absorbed by the lymphatics, whence it passes into the blood stream, gains the central nervous system, and so gives rise to tetanus descendens without producing local symptoms.

Antitoxin.

While tetanus antitoxin has been a brilliant success when applied prophylactically, and its efficiency in this sense is beyond question, there is no doubt that up to the present its employment after the onset of tetanus has proved disappointing. Nor is the reason for this far to seek. A view frequently taken is that by the time the patient's symptoms have developed sufficiently to place the diagnosis of tetanus beyond all doubt he is too often beyond remedy. The poison has reached his nerve cells and the unholy matrimony has been completed.

But before we take this pessimistic view with regard to the clinical application of tetanus antitoxin, it is well to consider briefly the available evidence on the matter under two headings. 1. The view of those who have gone into the remedial value of tetanus antitoxin. 2. The experimental evidence showing what can be done in the way of recovering animals from tetanus toxin.

1. One of the most careful and impartial investigations concerning the value of tetanus antitoxin after the onset of the disease is the paper by Kanthack which appeared in the *Medical Chronicle* during 1895. The conclusion which he came to was that "the serum treatment has not actually changed the prognosis in acute and serious cases. I believe that in milder cases it lessens the spasms, the pain, and the distress, and that apparently it has reduced the mortality in such cases, but to what extent we cannot tell until we are in possession of a larger number of cases, and until we are certain that all cases are published." This view is also the one which appears to be generally held by surgeons at the present time.

2. It is doubtful, however, if the remarkable experiments of Roux and Borrel, published three years after Kanthack wrote the above words, have received the universal consideration which they deserve. It has been already stated that Roux and Borrel produced tetanus by intracerebral injection of the toxin. They next demonstrated that this cerebral tetanus was not prevented by previous subcutaneous injection of antitoxin—even though the rabbit's blood contained abundance of antitoxin at the time, the intracerebral injection of toxin gave rise to tetanus. Their most striking experiment, however, was the following one. They gave to each of 20 guinea-pigs in the hind paw a dose of toxin fatal in about 70 hours. Eighteen hours later all the guinea-pigs had rigidity of the hind paw. By the twenty-fourth hour they were all tetanic. The 5 largest guinea-pigs were kept as controls; they died from the sixty-seventh to the seventy-fourth hour. Three of the guinea-pigs were injected subcutaneously with antitoxin; they died from the sixty-fourth to the seventy-second hour. The 12 remaining guinea-pigs had a small dose of antitoxin introduced intracerebrally—two drops into each hemisphere. In all of these animals the tetanus was arrested, the contractures remained limited to the paw, or to the two hind legs according to the hour of intervention. A month later the guinea-pigs were well, but the contractures still persisted. The conclusion which Roux and Borrel came to as the result of this and other experiments was that "a few drops of tetanus antitoxin in the brain cure tetanus better than large quantities introduced into the blood or under the skin. It is not sufficient to give the antitoxin; it must be introduced in the right manner. There is a point in the disease, however, beyond which antitoxin is of no avail in whatever fashion it is employed. The intracranial injection lengthens the period of efficacious treatment."

The further information which has been obtained of tetanus since this paper of Roux and Borrel was written has brought nothing to controvert the value of their work, but has rather confirmed it. The proof which has since been furnished that the axis-cylinders of the peripheral nerves are the main conduit of the toxin centripetally emphasises the importance of introducing antitoxin among the central neurons of persons stricken with tetanus. Abbe remarks that he has found in human cases that the intracerebral injection of antitoxin produced prompt arrest of the general convulsive spasm, a remark which I can confirm from a case in which I personally assisted Mr. D'Arcy Power in this operation.

Abbe gives the following directions for introducing the antitoxin intracerebrally. A line is drawn from one auditory meatus to the other across the vertex of the skull. From the point at which this meets the middle line a second line is drawn to the outer angle of the orbit. The middle point of this last line gives the site for the injection (Roux's point). An incision is made in the scalp and a small trephine or drill is used. The operation can be done under a local anæsthetic, but, as Bosanquet and Eyre say in their book, there does not seem to be any advantage in this over general anæsthesia, which also has the advantage of controlling the spasm. The point of the needle is thrust through the dura mater and into the cerebral substance. The antitoxin is then slowly forced into the brain. It is enough to put 5 c.c. into each side. It would seem better to inject the antitoxin into the actual brain substance than into the lateral ventricle, since the latter is practically equivalent to subarachnoid injection, which can be more easily effected by introducing the antitoxin intrathecally. This might be done at the same operation after withdrawing an amount of cerebro-spinal fluid equal to that of the serum injected.

While the above procedure would seem to offer most hope in the case of a person suffering from traumatic tetanus, especially in those cases where the incubation period is short and the disease therefore severe, it would appear rational to introduce the antitoxin at the same time into the circulation, and also locally so as to neutralise any free toxin in these situations. This is desirable also because in some fatal cases of tetanus the bacillus undergoes a certain amount of dissemination. There are advocates, too, of the intraneural injection of antitoxin, but while this is clearly indicated in cases of local tetanus and in ascending tetanus, the intraneural injection does not seem likely to be so valuable as the intracerebral when such phenomena as trismus or rigidity of the neck muscles have appeared; for symptoms such as these imply that the toxin has already reached the higher levels of the central nervous system.

The question as to how to deal with the anaerobic bacillus of Welch when it is also present has not yet been satisfactorily solved. At the present time the best thing to do seems to be to give the wound as much drainage, free air, and permanganate as possible. The announcement of Rosenthal[1] that he has found the serum of an animal prepared against B. perfringens to possess marked preventive properties justifies the hope that before long such a serum may be available for administration in that way.

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[1] Comptes Rendus de la Société de Biologie, 1910.

ARMY AND NAVY MALE NURSES' CO-OPERATION.—The seventh annual general meeting will be held at 89, Harley-street, London, W., on Wednesday next, Nov. 4th, at 3 P.M. H.R.H. Princess Henry of Battenberg will be present to represent Her Majesty Queen Alexandra.

FURTHER RESULTS IN THE ELECTROLYSIS TREATMENT OF CYSTITIS.

BY CHARLES RUSS, M.B. LOND., M.R.C.S. ENG., L.R.C.P. LOND.

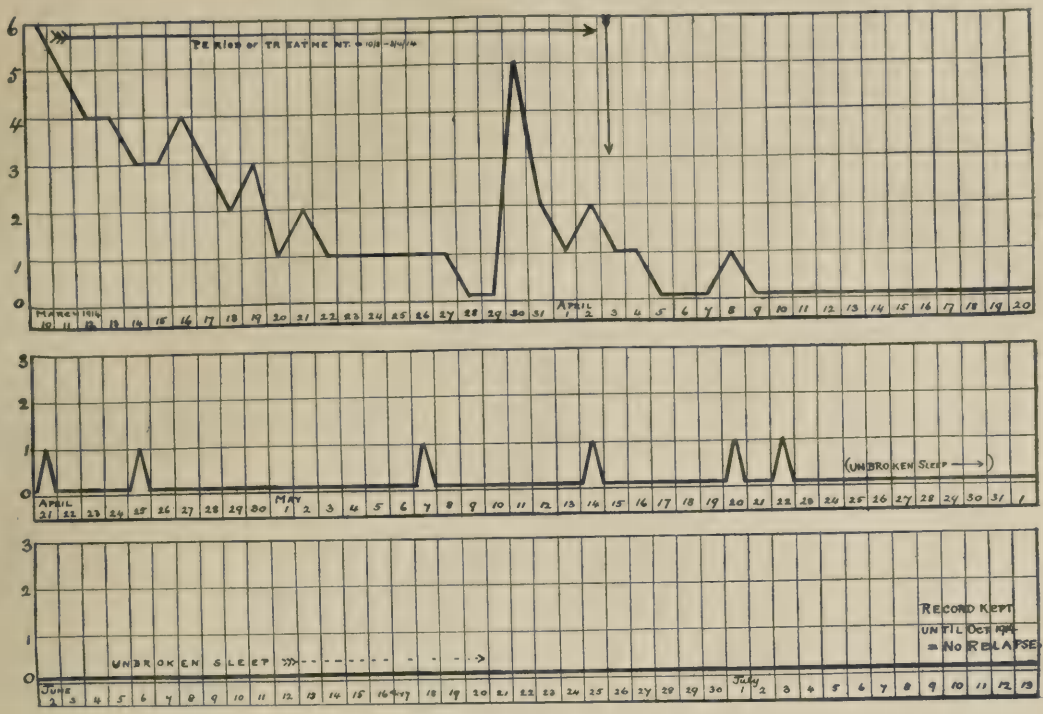
IN THE LANCET of Feb. 14th, 1914, I outlined a new method of treating coli-cystitis. In that article my experimental laboratory work was recalled, and the reasons were shown which led to the evolution of the process. I do not propose to enter into the diagnosis, bacteriology, or prognosis of the malady, for these are adequately dealt with in the text-books; but I intend to set forth the results obtained in some of my recent cases. Since passing the experimental stage I have in the last few years chiefly treated cases of chronic cystitis, and the majority of the patients, whether private or hospital cases, had previously received treatment by vaccine, injections, or lavage.

In a typical case of cystitis one realises that the patient does not much mind any symptom except the frequency. This is really their trouble. The patient's day is disturbed by the frequent or incessant call for micturition, and at night perhaps every hour or two there is a disturbance of sleep. There is little wonder that the victims of the chronic form present the appearance they do, and that their general health becomes undermined. It is usually conceded that the medicinal and other remedies in common use can do little, at least permanently, to combat the frequency. This is necessarily so because of their incapacity to deal directly with the bacteria. My method has the advantage of overcoming the organisms by a succession of blows at them *in situ*, and perhaps this accounts for its success.

The method.—Without going into detail I may repeat its essential points. After the urine is voided a special catheter is passed into the bladder, but no lavage is undertaken. A few ounces of fluid are then passed in, and the catheter with a glass tube attached is fixed upright by a clamp; this makes a fluid system of the bladder, the catheter, and the tubing. The upper level of the fluid is seen through the glass tubing to rise and fall with respiration. A lint-covered metallic belt encircles the lower trunk at the hip level and is connected to one wire of the battery. The other wire (platinum) is passed down the catheter and conveys the current through the fluid to the interior of the bladder. Radiating from the perforations around the catheter eye numerous electric streams pass in all directions through the bladder and lower trunk to reach the metallic core of the belt. In this way we have an electro-chemical action penetrating the bacteria and the entire vesical tissues. This action goes on for an hour or an hour and a half at each treatment. While the treatment proceeds the bladder is being gradually distended by the incoming urine and its recesses become exposed to the forces at work. The patients are unaware of the current's flow and recline at their ease, being occupied in reading and often also enjoy a smoke. If any pain or discomfort is felt it is certain that something in the arrangements needs readjustment. The only modification of the process I described is to increase the time up to one and a half hours at each administration.

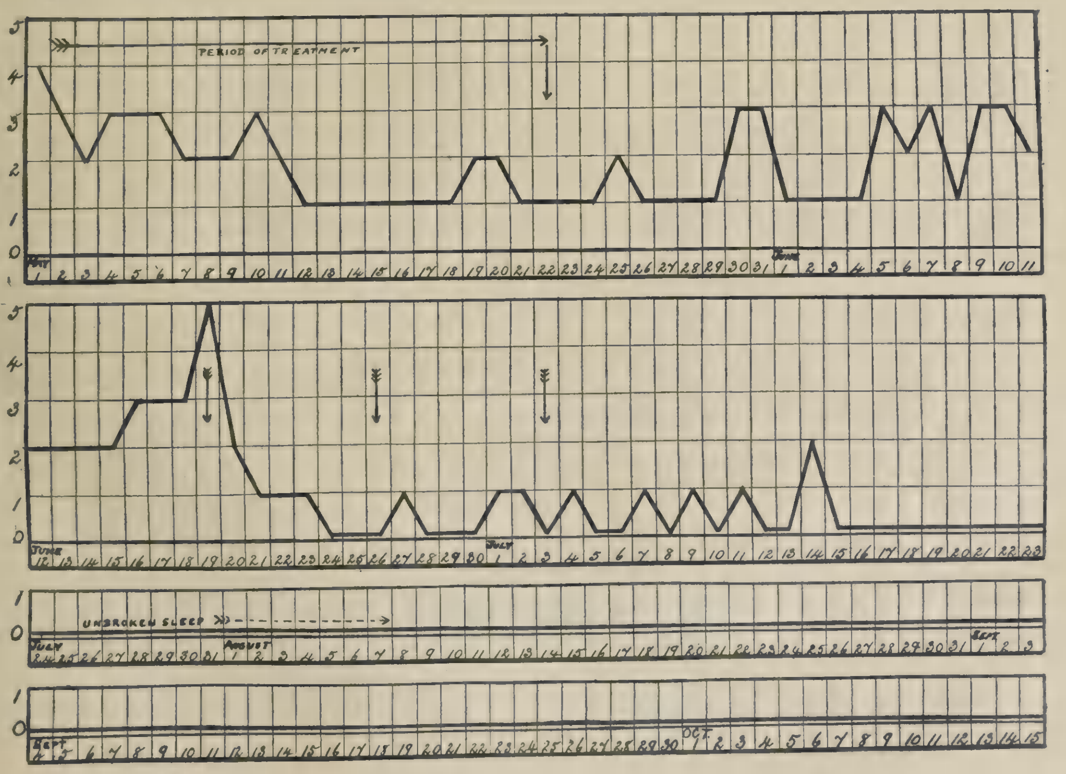
Types of cases illustrated.—I have selected three from my private and hospital cases which show different clinical pictures of cystitis and also

CHART 1.



CASE 1.—Cystitis seven years.

CHART 2.

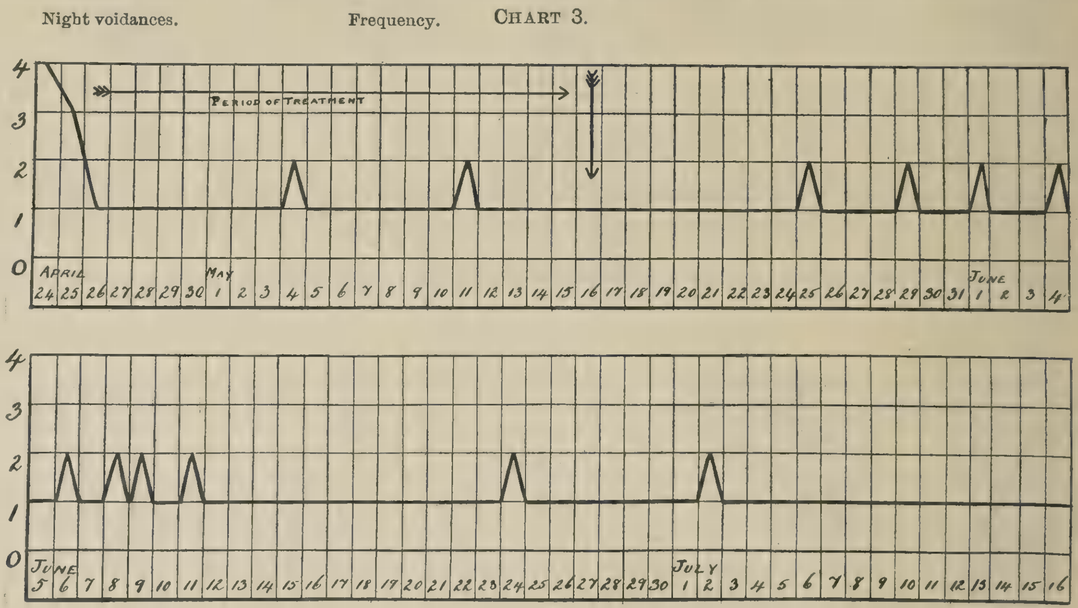


CASE 2.—Cystitis six weeks.

different bacteriology. My method of charting the frequencies is as follows. I take as a standard a night of eight hours' sleep uninterrupted by micturition. The time of voidance when going to bed is the point from which the frequency is calculated. For example, if a patient passes urine before going to bed at 11 P.M., and if there is any further voidance before 7 A.M. the next morning, it is entered in the chart according to the number of voidances within that eight hours. As regards the frequency ascribed to each patient at the commencement of the chart, this is the frequency declared by the patient, and I have only accepted it as a correct average after a careful examination of the history.

CASE 1.—The patient, a man aged 51, attended St. Peter's Hospital for seven years for cystitis. Symptoms: The day frequency equalled one hour, and the night frequency one or two hours. Urine alkaline, containing ropy muco-pus; bacteria (staphylococci) in very large numbers. The patient, who is an abstainer, was pale and depressed by his disorder, for which nothing had produced relief. I began the treatment on March 10th and finished on April 3rd, 1914, which is indicated by the arrows in Chart 1. At the end of the course his urine was neutral and occasionally acid; it contained a trace of pus and still pretty numerous staphylococci. The latter had, however, lost their power to irritate the bladder, and both the pus and staphylococci slowly diminished during observation. Two loopfuls of his urine planted at his visit in September gave only five colonies of the staphylococci. Considering that he had not had a night's sleep for years his recovery was a great relief after so considerable an endurance. When I last saw him he had not had a broken night's rest for over four months. During this patient's course of treatment the current did not exceed three milliampères.

CHART 3.



CASE 3.—Post-prostatectomy cystitis.

CASE 2.—The patient, a man aged 50, had had cystitis for about six weeks. Its onset was ascribed to the passage of a bougie down the urethra. He had passed this instrument himself for 20 years after medical advice of an impending stricture. Frequency equalled one hour by day and four times at night. Urine acid, and contained pus to about one-sixth of its volume; bacteria—staphylococci and colon bacilli. The patient was flushed, anxious, and miserable. His symptoms soon subsided under the treatment, but in view of the tendency to relapse I gave three more separate administrations at intervals of a week. These are shown by the arrows in Chart 2. The patient had residual urine varying from 3 to 8 ounces, and a resistance to the catheter was always met in the deep urethra, suggesting prostatic trouble. Mr. J. G. Pardoe's examination, however, showed an uncommon curve in the deep urethra with a normal prostate. This finding was amply justified by the result of the treatment, for the patient recovered completely. His pus disappeared, and I watched the urine clearing until it was almost a normal specimen. The loss of frequency is seen in the chart to have been established for several months.

CASE 3.—The patient, aged 63, had had cystitis for about two years prior to prostatectomy in March, 1914. The operation had removed the obstruction to micturition, but the pyuria and frequency remained. The urine contained masses of ropy muco-pus; bacteria—proteus bacilli and staphylococci. Frequency equalled four times nightly and about two-hourly by day. The patient was a nervous man suffering from asthma and bronchitis. He soon showed improvement, and up to the end of my charted observations his frequency was reduced to one voidance nightly. (Chart 3.) Perhaps this retentive power is as much as the new anatomy of the organs will permit.

Comment on the results obtained.—The dominant feature is, I think, the diminution and disappearance of the pus from the urine, and this follows the destructive action of the treatment upon the bacteria. The latter cause progressively less inflammation, and this accounts for the reduced frequency. The quantity of pus has been measured by sedimentation of the urine in graduated glasses, and a mixed sample of the night and morning urine is a better guide than a random sample. In alkaline urine the pus soon becomes ropy and cannot be measured accurately. In such cases I find that a few grains of boric acid taken by the mouth four-hourly reduces the alkalinity sufficiently to keep the pus fluid, and comparisons can then be made. Cystitis cases often pass several ounces of pus a day in their urine, and this loss amounts in a week to the impressive quantities which are often evacuated from empyemata. By arrest of this suppuration the drain upon the blood stream is stayed, and the patient's health and strength also become fortified by the longer periods of unbroken sleep.

Permanence of the results.—This important matter can only be proved by continued observation and obtaining the patients' records long after the treatment has ceased. I have been able to secure such records for periods of six months and even a year after giving the treatment, and all my charts are compiled from the patients' manuscript frequency dockets.

Pathological observations and considerations.—1. Large numbers of the bacteria remaining in the bladder after voidance of urine are killed during the flow of the current. They are, however, not all killed during one treatment, but they receive a series of lethal and sublethal electrical penetrations. The bacilli become changed in form and in their staining characters, and finally the urine becomes clear. 2. Observation of stained films from the urinary deposit shows the advent of phagocytosis, sometimes very pronounced, and this is not a common feature in the urine of cystitis. This ingestion of the bacteria by the pus cells of the urine suggests that the treatment induces a congestion of the bladder vessels, which by increasing the opsonin would account for the phagocytosis. I have seen the vessels of varicose ulcers strongly congested after electrolysing them, and if such congestion is induced in the bladder vessels the effect is similar to that of Bier's bandage applied to the limbs. Believing as I do that the opsonin is increased I avoid lavage of the bladder.

I am much indebted to Mr. Pardoe for his interest and support in the development of this method of treatment. Besides selecting cases at St. Peter's Hospital suitable for the treatment he has seen the patients afterwards and at intervals some months later for witness of the permanence of the cure or relief. My thanks are also due to Dr. R. Miller for his excellent suggestion of charting the numerical records of the frequencies.

Beaumont-street, W.

SMALL-POX, VACCINATION, AND THE NEW VACCINATION LAW IN SIAM.

BY H. CAMPBELL HIGHET, M.D. GLASG., D.P.H.,
PRINCIPAL MEDICAL OFFICER, LOCAL GOVERNMENT, SIAM.

Small-pox in Siam.

THROUGHOUT Siam, as in most other eastern countries which are not yet sufficiently protected by vaccination, small-pox is endemic, and from time to time takes on an epidemic form. Amongst the Siamese the disease has two names, the classic name being "kai dara pit," meaning the fever of a very harmful nature, while the vulgar title is "fi dat," the disease characterised by the eruption of boils all over the body. There are no records which show when small-pox first came to this country. In Bangkok it would seem that there is a fairly regular cycle of epidemicity. Every three or four years the disease becomes epidemic, persists for a few months, and dies down again for another two or three years.

The seasonal incidence of small-pox.—30 per cent. of the cases occur during January and 19 per cent. during December, the coolest months of the year in Bangkok.

The general death-rate from small-pox cannot be given in the absence of any knowledge of the number of cases which recovered, but of 379 cases under observation in the hospital for infectious diseases 211 died, giving a death-rate of 55·9 per cent. During the epidemic of 1911–12 the total deaths from small-pox amounted to 2368, equal to a mortality of 4·3 per 1000 of the population, amounting to 540,679 according to the late census (September, 1909).

The age at death in the above cases is given in the accompanying table, which confirms the view that the population of Bangkok is not yet sufficiently protected by vaccination.

Ages at Death from Small-pox.

Age.	Sex.		Total.	Rate. per cent.
	Male.	Female.		
Under 3 months	34	32	66	2·7
3 months to 1 year	277	293	570	24·0
1 to 5 years...	367	349	716	30·2
5 " 10 "	120	125	245	10·3
10 " 20 "	222	132	354	15·0
20 " 25 "	142	64	206	8·7
25 " 35 "	125	48	173	7·3
35 " 45 "	20	[illegible]	26	1·0
45 " 55 "	6	1	7	0·5
55 " 75 "	0	1	1	
Unknown	3	1	4	
—	1316	1052	2368	—

We note then that more than a quarter of these deaths were in infants under one year of age, and that 67·2 per cent. were in children under 10 years of age, a sure indication that vaccination has not been carried out sufficiently in Bangkok.

Methods of prevention against small-pox in Siam.—Vaccination is popular with the Siamese and has been so since its introduction in January, 1840. There are no "conscientious objectors" in Siam, and wherever and whenever a vaccinating officer is at work the people readily submit themselves or their children to vaccination. In the absence of vaccine lymph inoculation is still said to be practised freely in the interior of Siam. The honour of first introducing inoculation and later on vaccination into Siam is due to the American missionaries.

Inoculation against Small-pox in Siam.

As the history of these two movements is of some considerable interest I may be pardoned if I give here a few historical details. In this respect I cannot do better than quote the words of one of the principal actors in the movement, the late Dr. Bradley, the well-known American missionary and editor of the "Bangkok Calendar." In an article entitled "Inoculation for Small-pox," published in the "Bangkok Calendar" of 1865, Dr. Bradley writes as follows:—

> There was once a very extraordinary waking up of the Siamese mind to do something to modify the virulence of small-pox. It took place in the latter part of A.D. 1838. That annual scourge was unusually widespread and malignant at that time. Great efforts had been made by the missionaries every year for the four previous years to introduce vaccination, but all in vain. Being surrounded by the small-pox, with scarcely any hope of shutting it out from their own families, they then felt constrained, by the providence of God, to endeavour to save their children by inoculating them with the small-pox. The blessing of the Lord made it a complete success, every one of the subjects of the experiment having taken the modified small-pox in the mildest form. His late Majesty the King of Siam, being informed of it, sent a body of the royal medical faculty to the missionary physician to inquire into the matter, and then make to him a full report of their investigations. It was a very novel and exciting event for those early years of Prot. Missions, to be visited by such a committee, from such a monarch. Those servants of the king were very particular and thorough in their inquiries, for they had a great charge in hand, and a stern master to serve.

> About that time there was issued, from the press of the A.B.C.F.M. in this city, a little tract in the Siamese language, setting forth the advantages of inoculating for small-pox over having it the natural way, and the wisdom of the former course when the scourge is pressing fearfully upon one, and it is impossible to obtain the vaccine virus. A copy of this was sent to the king, and it was eagerly sought for and read by princes, lords, and the commoners. Presently 10 or 12 royal physicians were ordered by the king to visit the missionary physician daily for the purpose of seeing his practice in inoculating and treating the small-pox thus modified and divested of its virulence, and in this way to qualify themselves for inoculating in the royal palace. Having faithfully studied the art a few days with praiseworthy proficiency, they were armed with lancets and required to inoculate all that were unprotected in the palace of the king, and in the palaces of the princes, and in the families of the nobles and lords, and other officers of government in the city and out of the city. Other native doctors were encouraged by the king to follow this royal example, who extended the work, it is believed, into many of the provinces of Siam.
>
> Inoculation was then the engrossing business and care, not only of nearly all the native physicians, but also of a large proportion of the better classes of the people, from the beginning of the year 1839 until the month of April. It is impossible to estimate the many thousands that were within that period inoculated; and it is very remarkable that amongst them all there was not, probably, more than one case in 500 that proved fatal until the hot season was ushered in, when the work became so much less successful that it was suspended.
>
> The king then evinced his high appreciation of the blessings of inoculation by presenting to each of the royal physicians who had laboured in the work a purse of silver varying from 800 to 400 ticals, and to the missionary physician a purse of 240 ticals.
>
> So generally was inoculation accounted a perfect success that those who had been waked up and blessed by it wished for nothing better to take its place; and consequently it became subsequently an obstacle to the introduction of vaccination, because it was regarded almost as safe and always a more certain protection against small-pox in the natural way than vaccination.

Inoculation was not without its dangers, however, and when vaccination came into vogue inoculation was abandoned for a safe method of prevention.

Vaccination in Siam.

As has been already seen, the introduction of vaccination had been attempted for several years previous to the adoption of inoculation, but it was not until the middle of January, 1840, that the first active vaccine scabs were brought to Siam by an American missionary from Boston, U.S.A., *viâ* the Cape of Good Hope. On the arrival of the vaccine scabs great difficulty was experienced in obtaining subjects for vaccination, but fortunately the then Prime Minister, Somdej Ong Yai, came to the rescue. He placed 75 children at the disposal of the missionaries, and out of a total of 450 insertions three or four good pustules were found on the sixth day. From these vaccine was propagated, and over a hundred persons were vaccinated, but at the end of three months the virus lost its efficiency. To quote again:—

> Vaccination was resuscitated August, 1844, from scabs which were sent from Boston, U.S., overland, being enveloped in a little beeswax. It was propagated with unusual energy and thoroughness by the mission of the A.B.C.F.M. from that time onward for a period of about ten months, when the work was again stopped for the want of fresh virus from the pustules of living subjects. About 1300 persons were thoroughly vaccinated during that period out of about 2000 subjects experimented upon.
>
> After an interval of a year or more the blessing was again brought back through the influence of an American friend sending the virus overland as before; and thus it came and departed, with intervals varying from one year to two, until Dr. Campbell, R.N., F.R.G.S.L., in giving to it more thorough attention at all times for a period of five or six years, has kept it with us much the greater part of the time, and has done great good by it. It is now a settled blessing, not only to the families of all European and American residents of Bangkok, but also to the Siamese in general, among whom it is slowly winning, week by week, a wider range of confidence and usefulness.

It was not until the year 1904 that the Siamese Government undertook the preparation of calf lymph in Bangkok. A vaccine laboratory was then opened at Si Kak Phya Sri by the Hospital Department and large quantities of calf lymph were supplied to the public. It was soon found that more commodious premises were required, and a serum and vaccine laboratory was installed at Phrapratom and work was commenced there in August, 1906 (Siamese era 125). During the year 1912 the Vaccine Laboratory was merged in the Pasteur Institute under the immediate supervision of Dr. Manaud and Dr. Robert, both of whom have been trained in the Pasteur Institute at Paris. During the past seven years 1,890,596 doses of vaccine lymph have been issued to the public, and still small-pox continues to levy a heavy toll upon the population, and more èspecially upon the infants of Siam. It has long been evident, therefore, that the present voluntary system of vaccination is quite inadequate as a protection against epidemics of small-pox, but before a law for compulsory vaccination could be enacted certain necessary preliminary steps had to be taken.

The establishment of a vaccine laboratory was *the first step*, and, as we have already seen, this has been an unqualified success. *The second step* was the training of a sufficient number of vaccinators. For several years past suitable young men have undergone a course of instruction with regard to small-pox, the effects of vaccination, and the methods of vaccination. These have been examined by myself or my deputy, and certificates have been granted only to those who have shown reasonable proficiency and knowledge. In addition to these, all our sanitary inspectors are trained in the art of vaccination.

A third step was to accustom the public to regular vaccination every year. In order to carry this out a beginning was made seven years ago in Bangkok. Temporary vaccination stations were established by the Local Sanitary Department in hospitals, temples, and police stations throughout the city. These were kept open during the cooler months of the year, which is the season most preferred by the Siamese for vaccination. On the first occasion 3620 vaccinations were performed. Every year since then free vaccination has been provided, not only in Bangkok, but also in the outlying suburbs and in the muangs of the Bangkok monthon. During the past seven years a total of 80,934 vaccinations have been performed by officers of the Local Sanitary Department alone.

In the other monthons of Siam—those under the Ministry of Interior—vaccination has also been carried out on a large scale. During the past 12 months a special vaccination campaign has been carried out in the interior at the instigation of His Majesty the King, who has most generously defrayed all the expenses out of His Majesty's own purse. Up to April 13th of this year this special campaign has resulted in 304,938 vaccinations during the 12 months.

So far, then, as the present generation is concerned, it may be said that a large portion of the population of Siam is for the present fairly well protected against small-pox. People in the distant parts of the interior who never heard of vaccination before will now be able to judge of its value when the next case of small-pox develops in their midst. They are now accustomed to the operation and to the appearance of vaccinating officers in their district, so that the country may be now considered to be ready for the final step to which we have looked forward so long—i.e., a compulsory vaccination Act.

The Vaccination Law of B.E. 2456.

On Feb. 19th of this year B.E. 2456 (1914) His Majesty was graciously pleased to sanction the enactment of a vaccination law for Siam. The law was drafted by the Local Sanitary Department for application in the Bangkok province, and was revised by His Royal Highness Krom Phra Damrong, Minister of Interior, so that it is now applicable to the whole of Siam. At present it will only apply to the monthon of Bangkok, but at any time it may be proclaimed for other monthons in the interior.

A few words may now be said with regard to the chief provisions of this law. The basal idea is the desire to have every person now in the kingdom or who may enter the kingdom rendered immune to small-pox. Therefore as soon as this law comes into force every person who has not previously been successfully vaccinated must become vaccinated, unless it can be shown by a certificate from a duly qualified public vaccinator that he or she is immune to vaccination. Immunity may mean that he or she has previously suffered from small-pox or has been repeatedly vaccinated without a successful result.

Every parent or guardian of a child over one month old must take the earliest opportunity of having such child vaccinated. No definite time limit is laid down in the law, as, for example, during the first three, six, or 12 months after birth, owing to the many difficulties which might be experienced under local conditions. It will be left to the superintendent of vaccination to make such arrangements as are necessary from time to time, and to notify the time and place for vaccinations in any district. This will enable us to commence work during the cooler months of the year when vaccination is more popular in Siam. The origin of this preference is doubtless due to the fact that it was only in cool weather that vaccine lymph could be transported any appreciable distance when transport was slow and difficult. Nowadays, with railway communication, ice and thermos flasks, efficient vaccine lymph can be transported to almost every corner of the country at any time during the year.

Another point of importance in the law is the provision that the vaccinated child must be brought back to the vaccinator on the eighth day after vaccination so that the result may be verified. This will enable us to repeat the vaccination when necessary, and to check the efficiency of the lymph and the capabilities of the vaccinator. Certificates showing the result of vaccination will be granted. We look forward to the day when no child will be admitted as a scholar into any school whatever unless he can show a certificate of vaccination or of immunity from small-pox.

One of the most important clauses in the law is Clause IX. This gives the Minister power to issue a public notice enforcing vaccination or revaccination upon all the inhabitants of a district or locality within a specified time. Such power would only be taken in the possibility of small-pox becoming epidemic in such district or locality. No definite age is prescribed by this law for revaccination, but it is hoped that an addition will be made to it, definitely laying down that revaccination during the ninth year will be compulsory. The usual clauses permitting of postponement of vaccination in case of sickness of the child are included in the law.

Public vaccination will be performed free of charge at such times and places as may be notified by the superintendent of vaccination. Any person may, however, apply to a public vaccinator to perform vaccination at his residence, and in such case if the public vaccinator is employed by the Government a fee will be charged at a rate prescribed by the Minister. No restrictions are placed upon private medical practitioners as to time and place of vaccination and the fees to be charged. They will, however, require to take out licences as public vaccinators, if they wish to have their certificates recognised, for in accordance with Clause XI. the certificate of a public vaccinator shall be the legal proof of being vaccinated in accordance with the provision of the law. The reason for this is the necessity of protecting the public. No unqualified person will be recognised as a public vaccinator, and the lymph to be used must only be that which has been authorised by the Minister. The dangerous practice of inoculating with small-pox virus is now declared to be a criminal offence, and the offender will be liable to heavy penalties.

In conclusion, it may be stated that the "conscientious objector" has not been recognised in this law.

Bangkok.

PERIOSTEAL WHITLOW.

BY HUGHES R. DAVIES, M.R.C.S. ENG., L.R.C.P. LOND.,
PHYSICIAN TO THE SPANISH AND PORTUGUESE JEWS' HOSPITAL, MILE-END, E.

THE literature upon this subject appears to be scanty and unsatisfactory, and, with one exception available, that of the late H. W. Allingham, I find little that bears intimately upon the particular case I now record. From a paper read before the St. George's Hospital Hunterian Society and afterwards published[1] I make the following important excerpts, and desire to draw special attention, by italics, to the sound deduction of that lamented and brilliant surgeon, which the case I now bring before the profession amply verifies.

> "The last phalanx has no real periosteum. its deficiency being supplied by the cellular tissue covering it."

And then his theory that—

> "There being no periosteum to the bone its place is supplied by the soft tissues of the finger; consequently when an inflammation attacks the tissues it strangulates the vessels running in it to the bone, and so cuts off the blood-supply, and as a result of such a proceeding causes the phalanx to necrose. ...... It is well known in cases of necrosis that the new bone is formed from what remains of the periosteum, fascia, tendons, and whatever was near the original bone. *I therefore cannot see why new bone should not be formed from the cellular tissue surrounding the cavity from whence the phalanx is removed, and of course helped by the remaining epiphysis.*"

He remarks that:—

> "The flexor profundus is attached to the proximal end (the epiphysis) of the terminal phalanx, the sheaths of which blend with the periosteum."

This epiphysis, Allingham declared, always remained behind after necrosis of the terminal phalanx.

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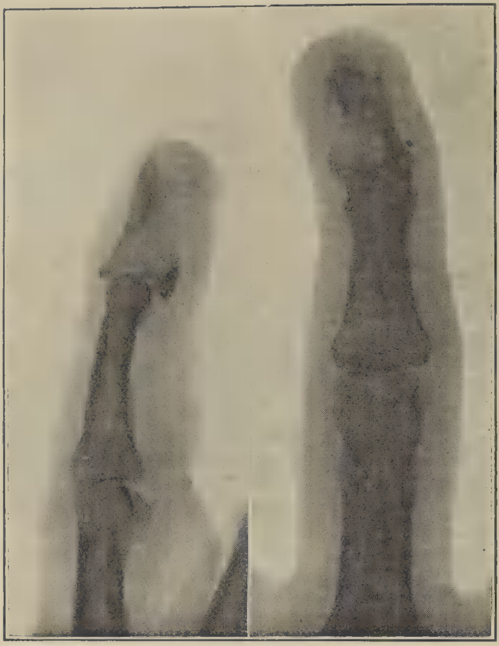
[1] Medical Press, Sept. 29th, 1886.

With this short introduction I will now record my interesting experience.

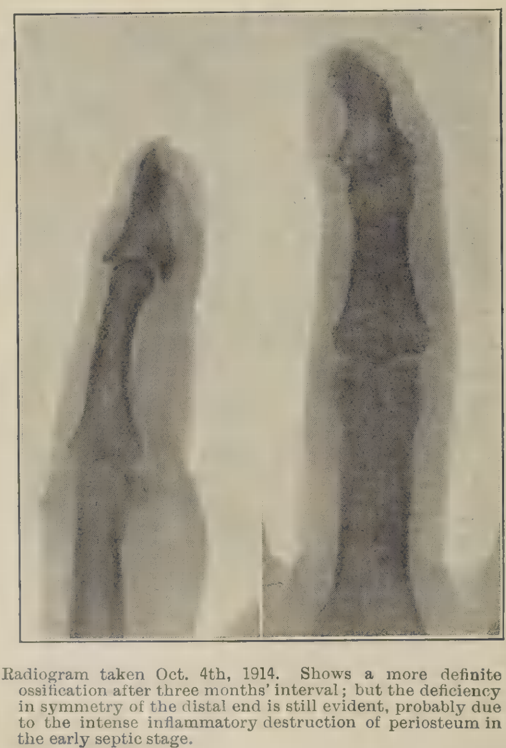
On Feb. 6th, 1914, I was consulted by a man, aged 57 years, on account of a whitlow on the terminal phalanx of the second finger of the right hand. The patient was in a very low state of health generally, and there was tenderness in the axilla, together with marked enlargement of the cubital gland. A bootmaker by trade, it is quite possible that the examining finger may have been wounded by a septic nail in the sole of a boot, and his ill-health have been a contributory cause of the trouble. I incised the centre of suppuration at once, and advised constant boracic fomentation. Within a few hours the condition of the finger was deplorable on account of numerous discharging sinuses which appeared all over the terminal phalanx. These sinuses I broke down immediately, making one general exit for the pus. A probe revealed exposed bone, and the finger nail seemed fated; indeed, as the inflammatory condition spread rapidly towards the hand I was much tempted to advise amputation of the offending phalanx. Fortunately, I refrained, and continued expectant treatment; but the discharge was profuse and lasting.

FIG. 1.



Radiogram taken July 4th, 1914. Shows the asymmetrical condition of the distal end of phalanx as well as the immaturity of the ossification of the new bone at the base of the phalanx.

FIG. 2.

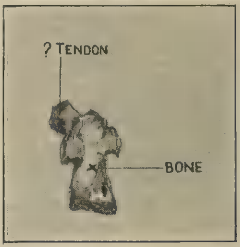


Radiogram taken Oct. 4th, 1914. Shows a more definite ossification after three months' interval; but the deficiency in symmetry of the distal end is still evident, probably due to the intense inflammatory destruction of periosteum in the early septic stage.

On March 2nd, the discharge still continuing, I passed a pair of forceps and gripped the terminal phalanx, which came away easily, bearing evidence of ligamentous and tendinous attachments. Again the question arose as to the advisability of amputation. But as the nail was rehabilitating itself so wonderfully well, stiffening the terminal joint, and as the swelling of the second phalanx showed evidence of subsiding, I again refrained from operating. However, the sinus and the discharge persisting, I was compelled to believe that there still existed some bone necrosis—or that all had not come away.

On May 8th this fear proved actual fact, for two small portions of necrosed phalanx came through the sinus, which then happily closed, leaving a satisfactory finger for use. It was then that I noticed that a surprising stiffening of the flaccid phalanx was commencing, principally at the base, and a radiograph on July 4th revealed the presence of a perfectly new phalanx. The upper portion of the negative plainly showed a deficiency in the symmetry of the new growth—probably the site of the recently ejected pieces of bone, which had prevented an earlier closing of the sinus by reason of their presence.

FIG. 3.



Sketch of necrosed phalanx removed by forceps March 2nd, 1914. In this instance apparently, in the removed necrosed phalanx, the tendon of the flexor profundus has attachment to the distal end of the phalanx, and not to the epiphysis as asserted by Allingham.

I take it that the necrosed original phalanx must have shelled out from the periosteum when seized by my forceps on March 2nd, since which date time, and hopeful patience, accomplished an apparent miracle—or the unexpected.

I present a sketch of the removed necrosed phalanx (or, according to Allingham, the phalanx *minus* the epiphyseal end), actual size, and the two radiographs, taken at the interval of exactly three months. They are worthy of study.

I venture to hope that this record will be valuable as showing what nature, guided, can perform; and also as a warning that a too-hurried use of the scalpel is not always desirable. During the course of treatment Allingham suggested that the nail, after the necrosed bone has been removed, should be strapped back to a small dorsal splint, to militate against an unsightly curving of the nail before the new phalanx has grown. In theory this sounds well, but in actual practice, as in my case, it would scarcely be feasible, since the slightest rough treatment would have torn the dead nail at once from its bed, and the flaccid terminal would have lost a certain temporary support. Besides, the strapping would have interfered with the frequent and necessary dressing of the sinus.

Woodford Green, Essex.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Exhibition of Cases.

A meeting of this section was held on Oct. 15th. Before opening the proceedings, Dr. J. J. Pringle, the President, announced that the meetings of the section would be held as usual during the forthcoming session.

The President showed a Lichenous Eruption in a woman 57 years of age. The lesions, which occupied large areas of the body and limbs, consisted of papules of both plane and acuminate type. He questioned as to whether the case was one of pityriasis rubra pilaris or of lichen planus, or whether it was possibly a combination of the two conditions due to some common underlying cause.—Dr. J. H. Sequeira had seen a similar case.—Dr. H. G. Adamson and Dr. J. M. H. MacLeod were in favour of the diagnosis of pityriasis rubra pilaris, towards which the President leaned.

Dr. W. Knowsley Sibley brought up a boy whom he had shown at a previous meeting on account of a peculiar generalised nodular eruption; the lesions had increased in size and number and the blood now showed the characteristic changes of lymphatic leukæmia.

Dr. Graham Little showed (1) a case of (?) Infective Granuloma occurring on the site of an old pigmentary nævus and (2) a case of Lichen Planus.

Dr. Sequeira showed: 1. A patient with an indurated, slowly growing Nodule on the chin for which he suggested the diagnosis of sarcoid, and in this the President concurred. 2. A case of Myxo-sarcoma of the skin of the forehead and face in a patient who had had an amputation of the foot four years previously for chondro-sarcoma of the tarsus.

Mr. H. C. Samuel brought up a patient with Symmetrical Pigmentation, Atrophy, and Telangiectases of the skin of the beard region resembling an X ray burn, but with absence of a history of exposure to X rays. He suggested a diagnosis of xerodermia pigmentosa commencing in an adult.—In the discussion which followed several speakers expressed the view that the patient was deliberately withholding the history of exposure to X rays.

Dr. S. E. Dore showed a case of Multiple Soft Fibromata.

Dr. Adamson brought a patient with peculiar Nodular Lesions about the face which gave it the leonine appearance of leprosy; there was, in addition, definite thickening of the bones of the nose. Dr. Adamson thought that the nodules might be analogous to rheumatic nodules.—The President stated that the case reminded him of erythema diutinum, while Dr. F. Parkes Weber thought it a form of leontiasis ossium.

Dr. Adamson also showed an atypical form of Lupus Vulgaris on the Thigh, the diagnosis of which from ulcerating syphilide had been extremely difficult.

Dr. George Pernet demonstrated cultures of Favus and Ringworm.

Dr. H. MacCormac showed a case with Lichen Spinulosus-like Lesions which on the face gave rise to atrophic patches like lupus erythematosus; he thought it was a tuberculide.—Dr. Adamson agreed as to its nature.—Dr. Morelle (Brussels) had also seen a somewhat similar case.

Mr. P. P. Atal (for Mr. Charles Gibbs) showed an extensive case of Keratodermia Blennorrhagica.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

Restraint in Mental Disease.

The autumn meeting of the Midland and Northern Division of this association was held by invitation of Dr. Graeme Dickson at Wye House, Buxton, on Oct. 22nd. Dr. Dickson presided.

Dr. R. C. Stewart read a short paper on Restraint in Mental Disease with the object of opening up a discussion on this subject. He dealt with restraint in its widest sense, and considered briefly mechanical restraint, the use of single rooms, the question of locked doors in asylums, treatment by sedatives, &c. He was of opinion that everything that took away the feeling of restraint tended to benefit the patient.

The paper was followed by an interesting discussion, in which every member present took part, and various opinions were expressed on the numerous points raised. One speaker held very strong opinions about mechanical restraint, and thought it ought never to be used, or only in very rare cases. He considered it had a bad moral effect on the nursing staff. Seclusion appeared to him only a lesser evil, and he did not like using drugs. It had always been a difficult problem with him to decide what was the best treatment for perverse old chronic patients. A distinction was drawn between acute and chronic cases, and it was generally agreed that the difficulty of finding a suitable means of restraint lay in the case of the latter. The use of verandahs and sleeping out of doors for noisy patients were considered beneficial. The various forms of sedatives in use were referred to, and special reference was made to the use of bromides. The limitation of airing courts by unclimbable fencing and the old question of the locked asylum door were to some extent dealt with. It was suggested that too many single rooms were provided in many asylums, and that they might be better used as "privilege" rooms than for the isolation of noisy patients.

Dr. Stewart replied, after which a hearty vote of thanks was accorded to Dr. Dickson for his kind hospitality.

Æsculapian Society.—A meeting of this society was held on Oct. 23rd, Dr. David Ross, a past President, being in the chair.—Mr. Wallace C. G. Ashdowne showed: 1. A man, aged 37, admitted for treatment of femoral hernia, who showed marked signs of Acromegaly, giantism, sexual undevelopment, and prominent lower jaw being well marked. 2. A man, aged 47, with a Tumour in the left side of the pelvis, extending to the inguinal region and round to the perineum, and it could be traced through the obturator foramen. A second tumour could be felt higher up in the position of the descending colon. Some occult blood was found, and since admission 2 or 3 ounces of bright, pure blood were passed. Operation was deemed out of the question on account of the extent of the tumour. 3. A man, aged 60, who had his penis removed for Epithelioma of glans. The penis was entirely removed and the mucous membrane attached to the skin in the perineum. The man was able to micturate in comfort by means of a funnel-shaped aluminium instrument devised by himself. Spinal anæsthesia was used for the operation, as the man had aortic aneurysm. 4. A man suffering from Tertiary Syphilitic Ulceration of the Pharynx, who had one injection of neosalvarsan in addition to mercury and potassium iodide. He was improving. 5. A young man, aged 19, who injured his left hip ten years ago through a fall from a swing. No inconvenience followed for three weeks, when pain occurred on walking. Tuberculous disease of the hip was suspected and extension applied for 18 months; extension had again been used more recently. On admission to the Metropolitan Hospital it was found that the head of the femur was dislocated upwards and forwards and the leg shortened ⅝ inch. The patient could walk up to three miles without pain. It was thought unnecessary to interfere. 6. A skiagram demonstrating Stones in Gall-bladder. 7. A Stone about 2 inches in length and ¾ inch in diameter found post mortem in the cystic duct of a woman who died from chronic bronchitis aged 88. The gall-bladder was quite free and there were no symptoms during life. 8. A boy, aged

6 years, from whose right ureter a calculus measuring 1 inch by ⅜ inch was removed. The calculus did not obstruct the passage of water, having formed a cul-de-sac. A second stone was removed later and gravel was still being passed.

LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held on Oct. 20th at St. John's Hospital for Diseases of the Skin, Dr. J. L. Bunch being in the chair. —Dr. Bunch showed: 1. A case of Seborrhœic Dermatitis in a patient who had suffered from syphilis; the lesions showed induration, and were situated on the forehead and both auricles. 2. A case of Tertiary Syphilis in a woman; the lesions of an indurated type were present on the legs and arms, and were deeply pigmented. 3. A case of Lipomatous Tumour of the Scalp in a man aged 55; the condition had been present for 23 years, and was said to have resulted from a kick. 4. A case of Cheiro-Pompholyx in a girl aged 14; the vesicles were present on the dorsum and palms of both hands.—Dr. H. W. Barber showed a case of Abnormal Syphilide in a boy; the lesion took the form of a swelling in the left groin with an infiltration of the surrounding skin over which was distributed a vesicular eruption; there was a generalised glandular enlargement, but the Wassermann reaction was negative; the microscopic section was that of a granuloma with formation of vesicles.—Mr. T. Wilson showed a case of Scleroderma of symmetrical distribution in a woman aged 45.—Dr. Morgan Dockrell showed a case of Multiple Idiopathic Pigmentary Sarcoma in a man, aged 50, who had been having a streptococcal vaccine with good results.—Dr. Simonds Gooding showed a case of Verruca Necrogenica in a man, aged 30, who worked in a cold storage. The lesions were situated on the angle of the jaw. Also an unusual case of Pigmentation of the Skin extending from the patellæ down to the feet of three months' duration in a man who some years previously had suffered from syphilis.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The annual meeting of this society was held on Oct. 19th. The attendance was, of course, unusually small, as many members are absent on naval and military service. On the recommendation of the new President, Dr. W. H. C. Newnham, it was decided to send a message of greeting to all these absentees. The Presidential address dealt in a most interesting way with the birth and growth of gynæcology and with some of the more important aspects of that subject at the present time. Dr. Newnham laid special stress on the importance of gonorrhœa in women as a cause of invalidism and sterility. The annual report was read by Dr. J. A. Nixon—the actual secretary, Mr. A. J. M. Wright, being absent on duty with the Territorial army. The financial position of the society is unfortunately not very reassuring, but there is reason to believe that means will be found for overcoming the chief difficulties. It is, of course, impossible to make any radical alterations at the present time.

EXETER CITY ASYLUM.—At the last meeting of the Exeter city council it was decided to advertise for a medical superintendent for the asylum at a salary of £500, increasing to £600, per annum. It was proposed that the officer devote the whole of his time to the work and should not engage in any outside practice, including consultative work. This was opposed on the ground that it would be beneficial to have a mental specialist for the assistance of private medical practitioners. After a considerable discussion the proposition was carried by a large majority.

ROENTGEN SOCIETY.—A general meeting of this society will be held on Tuesday next, Nov. 3rd, at 8.15 P.M., at the Institution of Electrical Engineers, Victoria Embankment, W.C., when the President, Sir Alfred Pearce Gould, K.C.V.O., will deliver his presidential address. Members desirous of reading papers, showing new apparatus, negatives, or lantern slides are requested to communicate with the honorary secretary, Dr. Robert Knox, 7, Harley-street, W.

Reviews and Notices of Books.

Pain: its Origin, Conduction, Perception, and Diagnostic Significance.

By RICHARD J. BEHAN, M.D., formerly Associate Professor of Physical Diagnosis, Western Pennsylvania Medical College, &c. With 191 illustrations in the text and many diagnostic charts. London and New York: D. Appleton and Co. 1914. Pp. 920. Price 25s. net.

WE suppose that pain is a symptom more frequently complained of by a patient and more certain to lead him to consult a physician than any other that might be mentioned. Essentially subjective as it is, moreover, unless it reveals itself by unmistakable outward expression the physician is not in a position either to affirm or deny its reality. The phrase "imaginary pain" is meaningless; if a patient honestly believes he is suffering pain, he is suffering pain; and when the patient says the pain is gone, it is gone. Unless the physician is well versed in the interpretation of pain phenomena the subjective nature of the symptom of itself will not give him much aid. He must know the various causes of a given pain, the reasons for its appearance in the particular case, and the different diseases giving rise to pain of similar character and localisation ere he can determine its exact significance.

Dr. Behan's book is calculated to furnish the practitioner with a valuable aid to the interpretation of pain. The study of the phenomenon involves little less than a survey of the whole field of internal medicine, and we are not surprised that a volume of over 900 pages has been found necessary for an adequate presentation of the subject. After introductory chapters on the nature of pain, its perception, classification, intensity, and distribution, the author proceeds to examine pain as it occurs in the various forms of disease of the nervous system, bones, circulatory system, glands, eye, ear, nose, throat, chest, and so on. To the subject of pain in the abdomen and abdominal organs no fewer than 390 pages are devoted. The systematisation of the work is noteworthy; there is no confusion and but little overlapping, and with the help of an excellent index the reader will find reference to any particular point a matter of ease. There is a bibliography which must contain over 1200 references to the subject and is sure to be of value to the student.

The critical reader will find various opinions expressed to which exception might be taken, but minute criticism cannot be entered into in a brief review. Oddly enough, we can find no reference to meralgia paræsthetica (Bernhardt's disease) either in the text or in the bibliography. Taken as a whole, we do not know of any single volume which contains so much interesting and valuable clinical information on the subject, and which has an appeal as much to the specialist as to the practitioner. We should think that it will be found eminently serviceable in everyday practice.

Cancer Experimental.

Por el Dr. ANGEL H. ROFFO. Buenos Aires: Libreria y Casa Editora de A. Guidi Buffarini. Pp. 319 + xxxiv.

Dr. Roffo gives an account of the present state of our knowledge in regard to the transmissibility of cancer in animals and of his own very extensive experimental work on the subject. The book is divided into six chapters. Chapter I. gives a brief survey of the recent work of Loeb, Reinke, Freund, Askenazi, Ehrlich, Wassermann, and others on cellular biology and pathology. The subject of the action of chemical and physico-chemical irritants, of micro-organisms and fungi, and of their possible rôle in the etiology of cancer is discussed in Chapter II. Dr. Roffo expresses his disbelief in the parasitic theory of cancer, and attaches little importance to the claims of various experimenters either to have isolated any specific cancer-producing micro-organism or to have produced true cancers by any form of injection or inoculation of such micro-organisms. In Chapter III. the author deals with the transplantation of tissues, and goes on to discuss spontaneous cancer in animals and the numerous attempts to engraft human cancer upon animals which have been made by experimenters in many different countries. He does not admit the possibility of such engrafting, and maintains that the latest experimental work demonstrates that for the successful transplantation of malignant neoplasms "normal" conditions are necessary—that is to say, the transplantation must be made on an animal of the same species.

Chapters IV. and V. are devoted to a description of the author's methods and results in the transplantation of cancerous growths and a discussion of the theory of the transmission of cancer from animal to animal by ecto- or endoparasites, a theory of "cancer cages" on all fours with the theory of "cancer houses" which has been a good deal discussed of late. Dr. Roffo has made a considerable number of experiments with a view to testing this theory of the transmission of cancer by infection or contagion. His results have been uniformly negative, and he pronounces as follows in summing up the whole matter: "The only method by which we can transmit cancer in animals is that of transplantation of cancerous tissue in its integrity on animals belonging to the same race and species as that from which the cancerous tissue is taken. Attempts at transmission to animals of the same species made with substances extracted from a cancerous animal or from the tumour itself have been uniformly unsuccessful." The remainder of Chapter V. contains a full account of Dr. Roffo's experimental work on cancer transplantation in white rats and his conclusions concerning the various factors which favour or tend to prevent successful transplantation. He is of opinion that individual white rats may possess a spontaneous immunity to cancer, and quotes the work of Bashford and others showing that a condition of artificial or therapeutic immunity may be brought about in animals by the injection of blood from healthy animals of the same species, of emulsions of various organs, or by the transplantation and absorption of portions of malignant tumours. In each case positive results are only obtained when material from animals of the same species is used for immunising.

In the sixth and concluding chapter recent experimental work on the radio- and chemio-therapy of cancer is very fully described and discussed, especially Wassermann's work with preparations of selenium. Dr. Roffo details a series of experiments made by himself with eosin-selenium to which was added a salt of rubidium. The addition of rubidium admitted of a reduction in the dose of selenium without loss of efficacy, a very desirable object in view of the extreme toxicity of selenium and its preparations. With the eosin-selenium-rubidium he found that it was possible to arrest the development and growth of cancerous tumours in white rats and to bring about their softening and absorption. The solution acts primarily on the nucleus of the cancer cell, causing fragmentation and vacuolisation. If the tumour is small complete reabsorption may take place; if large, the animal dies poisoned by the absorption of cadaveric products.

Dr. Roffo's work is enriched by an immense number of beautifully executed coloured plates and microphotographs, and contains a very full bibliography.

Ernährung und Stoffwechselkrankheiten.

Von Professor Dr. F. UMBER, Dirigierendem Arzt der I. inneren Abteilung des städtischen Krankenhauses, Charlottenburg-Westend, Berlin. Zweite neubearbeitete Auflage, mit 10 Abbildungen, 10 schwarzen und 11 farbigen Tafeln. Berlin und Wien: Urban und Schwarzenberg. 1914. Pp. 513. Price 18 marks.

THE first edition of this treatise appeared in 1909, since which important advances have been made in the study of the metabolism in disease, more especially in relation to lipoids, the relation of internal secretions to many metabolic disturbances, such as obesity and diabetes, and the whole question of the chemistry of colloids.

The introductory chapter on nutrition and nutritive substances gives a succinct account of the requirements of nutrition in general, and a specific account of proteins, carbohydrates, fats, and mineral metabolism on the usual lines. After this, the first subject dealt with is what is to be done with patients who are "under-nourished," those whose nutrition is impaired from one cause or other, including an account of the various forms of so-called cures that are adopted, more especially in Germany. Next artificial feeding—i.e., extrabuccal or parenteric nutrition—is dealt with. This includes an account of feeding by means of a sound or œsophageal tube, rectal alimentation, and the introduction of nutriments either subcutaneously or by intravenous injection. Elaborate tables and formulæ are given of the composition of foods used in these operations. Then follows a concise chapter of about 60 pages on obesity, its causes, symptomatology, and therapeutics, illustrated by several cases that came under the author's care. The chemical aspect of the metabolism in these cases is given in very full detail. Over 250 pages are devoted to the subject of diabetes mellitus. This chapter is, in fact, an admirable monograph on this subject in all its aspects, including temporary and permanent glycosuria, its clinical forms, symptomatology, complications, prognosis, and therapeutics. Here also the author from his own varied experience is able to add much that is both interesting and practical. This chapter is well worthy of the careful attention of clinicians. The cases cited were investigated with a thoroughness that does not obtain in every hospital. A plate is added showing the condition described by von Noorden as xanthosis diabetica. Many valuable suggestions as to the treatment of the "complications" are offered. Next follows an account of the rarer forms of disturbance of carbohydrate metabolism represented by lactosuria, pentosuria—a subject brought home to English clinicians by Dr. A. E. Garrod, fructosuria, and the still rarer heptosuria. Diabetes insipidus, though strictly speaking it does not belong to diseases of metabolism, is next dealt with, and the conclusion is arrived at that treatment is not very successful.

The remarks on gout, which form an exposition of this subject, should be read by clinicians who see much of this disease in its varied and protean forms. The reader must bring to the study of this chapter a fair knowledge of the chemistry of the purins and allied bodies. The work of Dyce Duckworth is frequently referred to, and good illustrations are given of the effects of lead and of Heberden's nodes in chronic articular rheumatism as revealed by the X rays. About 50 pages are given to the formation of calculi in the urinary passages, and the work ends with a short account of what the author calls "amino acid diathesis," including cystinuria, diaminuria, and alkaptonuria.

We can commend this thoroughly scientific and withal practical treatise to the attention of our English clinicians.

A Handbook of Fevers.

By J. CAMPBELL McCLURE, M.D. Glasg. London: Shaw and Sons. 1914. Pp. 470, with 28 temperature charts.

THE author of this useful volume has endeavoured to produce a handbook of fevers for the use of students and general practitioners of medicine, and to make his work before all things practical in character. Detailed descriptions of the pathological anatomy are not included, epidemiology and bacteriology are touched upon with a light hand, but treatment is discussed at full length and with plenty of practical directions. The first chapter gives a brief general account of fever and its management; it is recommended that alcohol should be used, if at all, as a drug, and only to tide over certain emergencies, in quantities of from two to four ounces a day. It is of value, as Dr. McClure points out, as a hypnotic and sedative for children and adults, in addition to being notoriously a diffusible stimulant. As for drugs that reduce the temperature the author says: "It is a good rule never to give antipyretic drugs." Thirteen chapters follow on as many fevers of known bacteriology, then ten on fevers of uncertain bacteriology, scarlet fever, measles, German measles, small-pox, chicken-pox, typhus, mumps, rheumatic fever, yellow fever, and whooping-cough. At the end of the book beri-beri, pellagra, and the treatment of tuberculosis with Mehnarto's contratoxin are considered, and there is a good index.

It is perhaps surprising that no room has been found in the volume for acute anterior poliomyelitis, an endemic fever of which small epidemics have occurred in England during the last few years. The account of epidemic cerebro-spinal meningitis, excellent as it is, would gain by more up-to-date references to the extensive literature of the subject, particularly to that hailing from America. For the rest, we have nothing but praise. The book is well written, comprehensive, and particularly thorough in its description of the management of cases.

LIBRARY TABLE.

A Short History of Germany and Her Colonies. By WALTER ALISON PHILLIPS, JAMES WYCLIFFE HEADLAM, and ARTHUR WILLIAM HOLLAND. Pp. 174. *A Short History of France.* By PAUL WIRIATH and J. E. C. BODLEY. Pp. 224. *Belgium, Italy, and Switzerland.* By the Rev. G. EDMUNDSON, H. WICKHAM STEED, and the Rev. W. A. B. COOLIDGE. Pp. 202. *A Short History of Austria-Hungary and Poland.* By H. WICKHAM STEED, WALTER ALISON PHILLIPS, and DAVID HANNAY. Pp. 170. *A Short History of Russia and the Balkan States.* By Sir DONALD MACKENZIE WALLACE, Prince KROPOTKIN, C. MIJATOVICH, and J. D. BOURCHIER. Pp. 186. *The Wars of the Nineteenth Century.* By Major-General C. W. ROBINSON, C.B., Colonel MAUDE, C. B., Lieutenant-Colonel J. H. VERRINDER CROWE, Captain C. F. ATKINSON, and others. Pp. 260. London: The Encyclopædia Britannica Company, Limited. 1914. Price 2*s.* 6*d.* net each volume.—The above volumes form a series of six handbooks covering the history, physical features, population, communications, industry and commerce, education, government, military and naval resources, and other interesting information concerning the countries that are now almost monopolising the attention of the entire world in consequence of the European war. The volumes consist of the various authoritative articles from the eleventh edition of the "Encyclopædia Britannica," arranged in a uniform sequence in the different volumes so as to form corresponding chapters. The last of the series contains full accounts of the political bearings, the course and results of the French Revolutionary War, the Napoleonic Campaigns, the Peninsular War, the Waterloo Campaign 1815, the Italian Wars 1848-70, the Schleswig-Holstein Question, the Seven Weeks (Austro-Prussian) War 1866, the Franco-German War, the Russo-Turkish War, the Servo-Bulgarian War, the Spanish-American War, the South African War, the Russo-Japanese War, the Turco-Italian War, and the Balkan War of 1912. It was a happy idea to collect into separate handy volumes, at the moderate price of 2*s.* 6*d.* each, or 12*s.* 6*d.* the set of six, all the carefully compiled and accurate information scattered through the pages of the "Encyclopædia Britannica." Photographs embellish the books, and special value will attach to the views of architectural masterpieces and historic shrines hitherto the glory of the civilised world, but now laid in ruins.

Mechano-therapeutics in General Practice. By G. DE SWIETOCHOWSKI, M.D. Munich, M.R.C.S. Eng., Clinical Assistant, Electrical and Massage Department, King's College Hospital. Illustrated. London: H. K. Lewis. 1914. Pp. 141. Price 4*s.* net.—This little book is intended to be a guide to the performance of massage in cases in general practice. It contains a great deal of useful information and sensible advice. There is no doubt that massage is still largely neglected by general practitioners, and that many excellent results could be obtained by its use in suitable cases if medical men would take up this work for themselves and rely less on the masseur. The subject is classified in the usual way into surgical, medical, and special sections, injuries and diseases being taken in regional order. Used with caution and with a knowledge of what is to be achieved there is no doubt that massage is most successful in the early treatment of fractures. The various movements to be used in these cases are clearly and briefly described and figured, and the progress of his own cases as described reflects credit on the skill of the author. To turn the crippled hand of a girl with Volkmann's ischæmic paralysis into a hand that can sew and darn after treatment for a year and a half is no mean achievement. Photographs of this case are given. Like most writers on massage, the author is too sanguine as to its curative powers in scoliosis, a deformity which he declares can be altogether prevented by care in detection and treatment. This is clearly the language of enthusiasm and haste. Speaking generally, we are inclined to regard the writer higher as a practical man than a theorist. More authoritative guidance than is here to be found will be required by medical men seeking to arrive at a decision as to the employment of massage in their more serious medical cases and the time at which it should be begun; but for the practice of massage they will find the book very instructive.

The Pharmacy Handbook. By F. W. CROSSLEY-HOLLAND. London: Henry Frowde and Hodder and Stoughton. 1914. Pp. 224. Price 6*s*.—This book is likely to be of less use to medical practitioners than to pharmacists; its intention is to provide the latter with useful information other than that which is obviously part of the knowledge of every pharmacist.

Tropical Hygiene for Anglo-Indians and Indians. By Sir C. PARDEY LUKIS, K.C.S.I., Director-General of the Indian Medical Service, and Major R. J. BLACKHAM, C.I.E., R.A.M.C., Hon. Surgeon to the Viceroy of India. Second edition. Illustrated. Calcutta and Simla: Thacker, Spink, and Co. 1914. Pp. 261. Price 3 rupees.—The first edition of this little book was published in 1911, and its immediate reception was so favourable that it was quickly sold out and a new edition became urgently called for. The authors have now thoroughly revised their work and brought it up to date; they have also largely rewritten a good deal of it. Instead of 10 chapters there are now 12, the two additional chapters dealing respectively with the disposal of the dead in hot countries and with the climate of the tropics. The other subjects considered and explained are the communicable diseases of the tropics, air and ventilation in hot countries, water and water-supplies, food, clothing, houses and their surroundings, the disposal of refuse, insects and disease, and disinfectants and disinfection in the tropics. The volume was originally intended to serve as a manual for the benefit of candidates for the senior certificate in Indian home hygiene of the St. John Ambulance Association, a body which has taken a large part in popular instruction in health matters, and whose certificate can now be obtained after a special curriculum adapted for the sanitary needs of India. The aim of the work is at bottom to spread among laymen the knowledge of domestic hygiene in India, where hitherto it has, unfortunately, not received sufficient attention, and to point out the chief dangers to which residents in India are exposed as well as the best means to be taken for avoiding these dangers. The high official positions held by the two collaborating authors of this volume will give great weight to their teaching, which will produce valuable results in the near future. The book covers a very wide field; it is therefore the more remarkable to find how much sound information and good advice have been concentrated in so small a space. The style of the book is concise and clear, maintaining well the interest of the reader; it cannot, in our opinion, fail to prove of great service, not only to the student of elementary hygiene, but to all Anglo-Indians and the educated classes of the native populations, if they will but give it the study which it deserves.

The Pocket Formulary for the Treatment of Disease in Children. By LUDWIG FREYBERGER, M.D. Vienna. Fourth edition. London: W. Heinemann. 1914. Pp. 260. Price 7*s*. 6*d*.—This little volume contains a great deal of information in a very small space. It affords a full list of all the drugs commonly used in the treatment of children, with their properties, uses, therapeutic action, and doses. In addition there is a therapeutic index at the end of the book. The disadvantage of all books of this kind is that in the plethora of drugs recommended in alphabetical order for any one particular disease it is difficult to make a suitable selection; for instance, in the treatment of typhoid fever 29 different drugs are recommended.

JOURNALS AND MAGAZINES.

The British Journal of Surgery. Vol. II., No. 6. October, 1914.—This number opens with a short note on James Syme, accompanied by a portrait—Mr. Corner describes the method of exploring the knee-joint by a splitting of the patella vertically. The author claims for this operation that it gives a complete view of the joint without weakening it, and allows operations upon the crucial ligaments.—A valuable collective report upon the operation of the resection of the posterior nerve roots is given by various authors with notes of 58 cases, the majority of which have not been published before. The conclusions arrived at are: that the operation is of permanent value for the abolition of spasm in paralysis of cerebral origin and a few classes of spinal origin, but that there are many limitations to its usefulness in these cases, particularly mental deficiency; that it is only of very occasional service in the cure of pain; that it has given good and lasting results in the cure of the gastric crises of tabes.—Mr. C. A. Pannett in an interesting experimental investigation about anoci-association shows under what conditions sensory shock-producing stimuli in the abdomen can be prevented from reaching the nerve centres by local anæsthesia.—A short epitome of contemporary Italian surgery is contributed by Professor Bastianelli, of Rome.—A very instructive article by Mr. Wilfred Trotter deals with chronic subdural hæmorrhage resulting from comparatively trivial injuries. He shows, too, how this condition may be recognised and how timely recognition may render curative operations possible.—Mr. Ernest Miles describes in detail, with numerous illustrations, the technique of the abdomino-perineal resection of the rectum for cancer.—A carefully worked out thesis, illustrated by many sections, on the etiology of appendicitis and gastric ulcer is given by Mr. R. G. P. Lansdown and Mr. Scott Williamson, who believe there are certain peculiarities of lymphoid tissue which the pyloric, duodenal, and appendical regions share in common, and that both gastric and duodenal ulcers and appendicitis are due to primary lymphoid infection, the ulceration of the mucous membrane being secondary.—Descriptions of visits to the clinics of Sir Watson Cheyne in London and von Eiselsberg in Vienna are full of technical and personal interest. There are also a number of cases of interest or rarity described and one instructive mistake.

The British Journal of Tuberculosis. Edited by T. N. KELYNACK.—In the October issue Professor Sheridan Delépine gives the results of the information collected by him since 1896 in connexion with the administrative work carried out in Manchester[1] and elsewhere in relation to tuberculous milk. By an analysis of statistics relating to the tuberculosis mortality in comparison with the efforts made for the reduction of tuberculous milk he is led to the conclusion that although there is not complete agreement in the results obtained by various observers as to the exact amount of human tuberculosis attributable to the consumption of tuberculous cow's milk, there is clear and cumulative evidence that cow's milk plays a very important part in the production of infantile tuberculosis in England and Scotland. Discussing surgical tuberculosis in childhood, Mr. Lawford Knaggs lays great stress upon rest in joint tuberculosis as the one agent that has stood the test of time. He does not, of course, neglect other methods, but urges that the responsibility of laying out money subscribed for hospital purposes is great, and that if it is spent in exploiting new methods of treatment it may very soon be found that it has been thrown away. He suggests that it would be wiser and more economical to proceed on old lines that have been proved to be sound, which description undoubtedly applies to the treatment of hip-joint disease by rest and extension. The Arneth Count in Pulmonary Tuberculosis, by Dr. W. E. Cooke; the Albumin Reaction of the Sputum in Pulmonary Tuberculosis, by Dr. E. G. Glover; and an account of the Tuberculosis Conference at Leeds, by Dr. Herbert de Carle Woodcock, are the other articles.

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[1] See THE LANCET, March 25th, 1912, p. 1424.

The British Review. Edited by RICHARD JOHNSON WALKER.—The stupendous war forms the staple of this periodical for October. Major G. W. Redway begins a serial article on the True Story of the War, briefly skimming the causes and elucidating the principles that compelled our intervention. He discusses the possible strategic ideas in the minds of the respective commanders, and describes the operations to the point at which General Joffre resumed the offensive that culminated in the battle of the Aisne. Paul Parsy describes the early stages of mobilisation in France. Bruce Mitford traces the relation of the Japanese to the war and deplores the suspicion and enmity which Japanese actions have encountered, and holds that Japan by her magnanimity and self-restraint has dealt a heavy blow at that grim spectre of the future world—race prejudice. The hope for Poland is laid bare by R. S. Latimer, who maintains that Poland's ideals are insured to her by the Treaty of Vienna (1815), which hitherto has been kept not at all by Germany, under whose influence Russia also has for long attempted to stamp out Polish national aspirations. Austria has not departed so widely from the principles of policy and justice, but has meted out not a little kindly treatment in her share of the divided nationality. The recent proclamation on the part of Russia, however, has renewed hope for Poland, and Mr. Latimer urges that "here to-day is a great opportunity for the mightiest emperor of the three to keep the pledge given by his ancestor, and in so doing to win to himself the allegiance of a great nation and the admiration of the world." W. M. J. Williams, writing on the financing of a great war, concludes that the field of taxation must not be widened. Property is already overtaxed, only drink and tobacco can bear further imposts, and with some aid from these income-tax will have to bear the burden. Demetrius C. Boulger records some personal war experiences. Among other articles, Hilaire Belloc reviews the reign of Pius X., the note of which was simplicity, consisting in reassertion of clear-cut principles as the rule of conduct, political as well as personal, in opposition to expediency, and ventures the prophecy that when the war is over and the liquidation of Europe is concluded his action will be seen to have been prophetic. The editor reviews the Papacy's nearly 2000 years' experience of wars, and sees in Benedict XV. an adequate minister to the needs of a new era. "E. C. K." urges that the people of Ireland must develop on their own lines, and the innate love of "glory," which they share with the French, seems to him one of the strongest reasons for instituting a national system of self government. Verse, much of it on patriotic themes, is abundantly represented in this number.

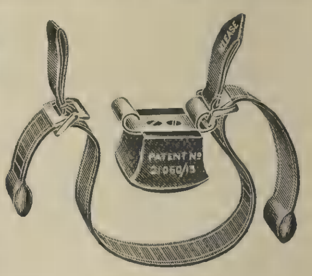
The North American Review. Edited by GEORGE HARVEY.—The October issue divides its contents into two parts, of which the first five articles deal with various aspects of the war. The remainder confines itself to the æsthetic side of life. Mr. William Elliot Griffis criticises his country's attitude towards Japan, Sir A. Quiller Couch examines the workmanship of Macbeth, and Mr. David A. Modell reviews the domestic life of Tolstoy as laid bare in his letters to his wife, pointing out that the letters afford yet another illustration of the fact that great men are apt to lead unhappy married lives. The matter with the poets, according to Mr. Robert Haven Schauffler, who inquires why the present renaissance of the poetry lover has failed as yet to bring with it a renaissance of the American poet, is that "the poet is tired." Great art demands fulness of life, and this has been unattainable because "we have been unwilling to let our poets live while they worked for us." He suggests the establishment of fellowships of creative poetry. In Life and Mind, Mr. John Burroughs examines critically the mechanistic conception of life, and makes out a strong case for the fact "that you are you and I am I, and that human life and personality can never be fully explained or accounted for in terms of the material forces."

The Journal of the East Africa and Uganda Natural History Society contains in the August issue (Vol. IV., No. 8. London: Longmans, Green, and Co. Price 4*s.*) several articles of interest to naturalists, including the African brown-bellied kingfisher, of which there is a coloured plate, by Dr. V. G. L. van Someren; Game Animals of Jubuland, by Mr. I. N. Dracopoli; and Fishes in British East Africa and Uganda, by Mr. F. G. Aflalo. Dr. Wynstone-Waters's article on the Organic Cell is continued. The doubt with which stories unsupported by evidence of the discovery of new animals are received sometimes proves to be wrong, the platypus and the okapi being cases in point, and it may be that the weird animal which has been named chemosit or nandi bear may prove eventually to have an actual existence. Anyway, Mr. A. Blaney Percival's short note on the beast is interesting. Stories in regard to the animal do not agree except in this, that it is fairly large, stands on its hind legs, is nocturnal, very fierce, and kills men or animals—by no means a scientific or illuminating description. Mr. C. W. Hobley has already in this journal referred to the "unknown," and gave a diagram of its supposed foot in an article on Some Unidentified Beasts, while Mr. G. W. Hickes has also mentioned an unknown beast seen on the Magadi railway which may or may not have been the elusive quadruped in question.

New Inventions.

AN IMPROVED TOURNIQUET: THE WESTERN.

FOR some time past in connexion with ambulance work the need has been felt for a more efficient form of tourniquet than those in general use. In the case of the indiarubber form the rubber soon perishes, and when the instrument is applied the circulation of the limb is completely restricted. In the pad-and-strap tourniquet there are three distinct weaknesses: (1) When the strap is tightened the pad is pulled out of place; (2) owing to the means to secure the appliance being a spiked buckle some relaxation of the band takes place and it is difficult to remove or adjust; and (3) the strap, being pierced by the buckle spikes, is weakened and soon wears out. The instrument here figured overcomes all these drawbacks and possesses many advantages. It consists of a pad or block of vulcanite (or other suitable material) which is affixed to a metal plate, one end of which forms an "eye" and the other an open hook. To the eye is permanently attached a special form of spikeless buckle (known as the "Bennett"), and a similar detachable buckle engages over the hook of the metal plate when the instrument is in use. Through the two runs the strap of the tourniquet, which consists of two lengths of webbing placed one over the other and stitched across at frequent intervals, the ends of the webbing being thickened so that it cannot be detached from the buckles. To apply the tourniquet the loose clip is removed from the hook, the block is placed in position, the strap is passed round the limb, and the loose clip replaced over the hook. Pressure is then exerted on both ends of the strap, and the block is forced directly downwards, the strap automatically holding at the point of greatest pressure. To remove the tourniquet the release tongues are pulled with an upward motion, when pressure is instantaneously relaxed. An additional lock is provided for use in cases in which a patient may have to be transported a considerable distance.



Messrs. Hatrick and Co., 70, St. John-street, Clerkenwell, are the makers.

J. M. CARVELL, M.R.C.S. Eng., L.S.A.,
Surgeon to the St. John Ambulance Brigade.
Avonmore-road, W.

THE LANCET.

LONDON: SATURDAY, OCTOBER 31, 1914.

Services by Medical Officers of Health to Military Authorities.

As a result of the issue of the War Office and Local Government Board directions, to which we referred last week, medical officers of health have considered the position which they are asked by the Government to occupy in relation to troops stationed in their areas. The duties enumerated are at first sight rather formidable. They cover such matters as the distribution of troops in billets, the sanitation of camps, the sufficiency and purity of water-supplies, and provision for cases of infectious disease among the military population. Medical officers of health who have in the past paid little attention to military hygiene may well at the beginning feel doubtful both of the value of the assistance which they can give, and of the reception which any proposals which they make may receive from commanding officers or from their colleagues on the Army Medical Staff. With regard to the latter situation cases have already been brought to our notice in which the medical officer of health has not found his appearance on the scene or his offers of assistance well received. All such difficulties, however, should now be effectively removed by the new official directions. The question whether the medical officer of health has any right of entry under Public Health Acts on military premises does not now arise. He is officially regarded as a local expert officer on the spot whose assistance is to be invited by the military, and he is given authority to report serious conditions affecting the health of the troops in his district, both to the War Office and to the Local Government Board.

As to the work required, medical officers of health are unlikely to go far wrong if they apply to the new environment the general principles of their civil action. Military conditions do not affect the underlying facts of infection and ill-health resulting from overcrowding, accumulations of refuse, excretal nuisances, presence of flies and vermin, or absence of general cleanliness. The remedy may be somewhat different in application, and standards may in some cases have to be more lenient and in others more strict. Sufficient guide on the orthodox views in these matters is, however, to hand in the admirable little manual of military hygiene issued by the War Office, and local circumstances will often enable new departures to be made with excellent results, as may already be seen in the arrangements for water-supply, latrines, and scavenging which have been extemporised in some of the provincial towns which are now occupied by billeted troops. One of the most important of the duties which the Local Government Board has placed on the medical officer of health is that of ascertaining and bringing to the notice of the local authority, for immediate action, any public services which that authority can render to the troops. Many such services at once suggest themselves: opening public baths, giving facilities for washing clothes, lending municipal clinics or dispensaries for the examination of recruits, providing evening recreation rooms, disinfecting clothing and blankets, and similar matters. The occasion should be taken also to remedy any defects in the ordinary sanitary services of the district and to coöperate with the military authorities in preventing the use of unsuitable or dangerous quarters for billeting. Isolation hospital accommodation should be seen to, and if necessary enlarged, and bakehouses, slaughter-houses, or other places used for the preparation of food for the troops should receive special attention.

In many of the important centres where troops are aggregated the new directions will be almost superfluous. Much of the work specified was begun at once after the outbreak of the war, without waiting for official warrant, and we believe that the local sanitary authorities have seldom been appealed to in vain for any practical assistance which they can give in the national emergency. It should be recognised also that in many instances, as in London, Territorial troops have had the advantage of including in their organisation medical officers of health and others who, as sanitary officers for divisions or smaller units, have themselves since their mobilisation taken such vigorous measures for the health of the soldiers under their charge as to leave very little to be supplemented by work under the new scheme. The latter, if we properly understand its intention, does not in any way remove the responsibility of the military medical service in matters affecting the health of the troops, and much military hygiene is work which cannot be done on outside advice, however good. The education of the individual soldier in the proper care of his person and environment in particular is daily work for the execution of which the army must look to its own medical service. The new troops have had to draw for their medical officers on men untrained in military work, and it is of first importance that they, like their colleagues in the regular service, should devote themselves not only to the care of sick and wounded, but also to the study of all matters affecting the daily life of the soldier, and be ready with confidence to give advice to all ranks which make for health and efficiency, and be fearless in forwarding to higher authority reports of deficiencies which in their opinion ought to be remedied. With information thus coming to army headquarters from both the military and civil sides, with local coöperation and goodwill in every locality where troops are quartered, and with increasing appreciation by combatant officers of the importance of health considerations, the outlook will be satisfactory if the individuals play their allotted part. And this we make no doubt they will do. The Sanitary Committee now appointed by the War Office should have its task appreciably lightened by the existence of the new scheme, the working of which can be periodically watched and supplemented under the advice of the Committee as experience is gained. The personnel of this Committee is announced on page 1069.

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The Graduated Labour Treatment of Pulmonary Tuberculosis.

WE have received a copy of an interesting report on the after-histories of patients discharged from the Brompton Hospital Sanatorium at Frimley in Surrey during the years 1905–1910. The report has been issued by four of the physicians to the Brompton Hospital who are or have been visiting physicians to the sanatorium—Dr. S. H. HABERSHON, Dr. F. J. WETHERED, Dr. P. HORTON-SMITH HARTLEY, and Dr. J. J. PERKINS, and the medical superintendent of the sanatorium, Dr. W. O. MEEK. The sanatorium was formally opened on June 25th, 1904, but it was not until the following year that the institution was in full working order. The statistics accordingly refer to the period March 8th, 1905, to Dec. 31st, 1910. The sanatorium was originally intended for 100 patients, but in 1908 the beds were increased in number, and at the present time there is accommodation for 148 patients In arriving at a conclusion as to the result of the treatment carried out at Frimley it is important to bear certain points in mind. The great majority of the patients have passed through the wards of the Brompton Hospital in London, whence if found suitable after a period of observation they have been drafted on to the sanatorium. The patients were not taken at random, but were carefully selected, only those patients being chosen who were free from fever or other serious constitutional symptoms, who possessed considerable vitality, and had already shown indications of a favourable response to treatment. So far as possible also patients with signs of limited disease were selected, although it was soon found that patients with extensive disease, but of a quiescent type, often did remarkably well. In other words, more importance lies in whether auto-inoculation is, or is not, easily induced than in the pathological stage of the disease. Only those individuals should be placed on graduated labour who can take a fair amount of exercise without exciting undue febrile response. Another point on which the physicians at Brompton lay stress is the likelihood of the patient obtaining work upon his discharge from the institution, and it early became apparent that if the patient had no work to return to after leaving the sanatorium he would almost certainly relapse quickly through inability to obtain adequate nourishment. In the introduction to the report attention is rightly drawn to the conditions under which patients are sent to Frimley, for, as the physicians remark, it would be a mistake to suppose that the results obtained there in regard to the arrest of the disease and prolongation of life give any accurate index of the economic results which might be expected if all cases of tuberculosis of the lungs were sent haphazard to sanatoriums. We are glad to see stress laid on this point; emphasis must be given to the fact that graduated labour treatment is only suitable for a certain class of case, and would be the reverse of beneficial if all patients suffering from pulmonary tuberculosis were submitted to the régime. In the early days of sanatorium treatment the idea arose that it was suitable for every variety and stage of the disease, hence much disappointment arose, and the methods adopted at Frimley would suffer a like disrepute if a careful selection was not made.

The report deals with the details of the treatment which are now known to the profession at large. Elaborate statistical tables, admirably drawn out, are given to demonstrate the results achieved. The total number of patients discharged during the six years covered by the report was 1892. The patients were communicated with at periodical intervals after they were discharged, and the results are based on the after-histories of 1674 of these cases, the remaining 218 being accounted for by 64 who only remained for a few days in the sanatorium, 91 in whom a diagnosis of pulmonary tuberculosis could not definitely be made, 19 who had suffered from pleurisy with effusion but without definite evidence of pulmonary involvement, 24 admitted for a second period of treatment, and 10 who died in the sanatorium. The object of the report is stated to be to show the proportion of the 1674 patients who during each year following their discharge have been (*a*) well and able to work; (*b*) alive; (*c*) known to be dead; and (*d*) lost sight of. Further, in order to render the statistics more reliable in each year the patients in whose sputum acid-fast bacilli were found are tabulated separately from those in whose sputum such bacilli were not present. This is a course highly to be commended, for a considerable number of physicians who have had a large experience in that disease are convinced that the only pathognomonic test for pulmonary tuberculosis is the demonstration of tubercle bacilli in the sputum. We strongly support those authorities who maintain that the results of any supposed treatment for the disease based upon cases in which the bacilli have not been so found are too fallacious to be of any value. The cases are classified from the clinical aspect, according to the number of lobes in which physical signs of disease were found on or shortly after their admission to the sanatorium. The statistical tables are divided into three series. The first deals with the after-histories of the 1674 patients who were treated at the sanatorium and discharged during the period March 8th, 1905, to Dec. 31st, 1910. The cases discharged in each year are divided into four classes: (1) and (2) "Full-time" cases, in which respectively tubercle bacilli were and were not found in the sputum; and (3) and (4) "short-time" cases under similar circumstances. In Series II. the after-histories of the "full-time" patients are further analysed in the light of the "immediate result" of treatment at the sanatorium. The third series of tables was compiled to show the after-histories of all the "full-time" cases of pulmonary tuberculosis which could be traced for a period of (*a*) five years and (*b*) four years subsequent to discharge.

Some remarks on the third series will indicate results which have been achieved. Unfortunately, a large number of cases have been lost sight of, which to some extent renders the statistics of less value than they otherwise would be, but to obviate this drawback untraced cases are eliminated in working out the percentage of results obtained. One table shows the condition of "full time" cases (tubercle bacilli present) discharged during 1905–6–7 at the end of each of the five years subsequent to discharge. During that period 292 patients were discharged; at the end of the first year 175 (65·8 per cent.) were well and able to work, 65 (24·4 per cent.) were alive, 26 (9·8 per cent.) were dead, and 26 had been lost sight of. In a similar manner statistics are given of the next three years, each year the number of cases lost sight of being deducted. Then finally the condition of 227 cases at the end of the fifth year following their discharge is given, with the result that 38·8 per cent. were still well and able to work, 14·8 per cent. were alive, and 46·6 per cent. were dead. On the other hand, with those cases in which tubercle bacilli were not found, at the end of five years 74·3 per cent. were well and able to work, 10·3 per cent. were alive, and 15·4 were dead. Taking *all* the "full time" cases together at the end of the five years 48·4 per cent. were able to work, 13·6 per cent. were alive, and 38 per cent. were dead. Now in order that any statistics of the results of treatment at one sanatorium may be satisfactorily compared with those of another institution it is essential that the figures should have been collected in exactly the same way, and that the social condition of patients, the manner in which they were selected, and their subsequent modes of life should be similar. These factors are extremely difficult to fulfil. In the instance of the Frimley Sanatorium the complete manner in which the tables are drawn up compares very favourably with the statistics of other sanatoriums in which patients are mainly those of the working classes, and we believe that the results must be taken as distinctly good. In the statistics of the German sanatoriums under the provision of the Invalidity Insurance Law during the years 1904 to 1908, at the end of five years after discharge 44 per cent. of the male and 51 per cent. of the female patients were capable of working. No distinction, however, is drawn between those cases in which tubercle bacilli were found and those in which they were not found.

In reviewing the report as a whole we consider that the methods adopted and the way in which the figures are arranged would form a good practical standard on which the reports of other sanatoriums and institutions might be drawn up, for it is only by means of uniformity that any useful comparison can be made as regards the various therapeutical measures which are adopted for the treatment of pulmonary tuberculosis.

Annotations.

"Ne quid nimis."

THE NATIONAL COUNCIL FOR COMBATING VENEREAL DISEASES.

THE inaugural meeting of the National Council for Combating Venereal Diseases will be held at the house of the Royal Society of Medicine on Nov. 11th at 4 P.M. It has been brought to the notice of the organising committee that there is an immediate need to call into being this National Council now during the continuance of the war. The provisional honorary secretaries of the committee in a communication to THE LANCET say:—"The abnormal state of the country gives rise to conditions which demand to be dealt with. There is great need of disseminating sound knowledge on this subject among the men collected together in large camps, so as to safeguard both their interests and those of the women in the vicinities. Furthermore, there is need to anticipate, and, if possible, to check that exacerbation of venereal disease which always follows in the wake of a great war. There is already occasion for action in the first of these directions; it is not yet known what other demands may occur. It is therefore felt that the National Council ought to be in a position to make an immediate response to any call that may be made to aid or supplement the efforts of those in authority. It is, therefore, because of the urgent need during war time that the inaugural meeting is now being summoned. and the organisers hope that it will meet with support." We cordially agree with the view that the time for educating the public as to the need for combating venereal disease and the methods which should be employed is exactly now. From a small and local inquiry which we made ourselves a fortnight ago into the prevalence of gonorrhœa among the recruits we received certain evidence that the existing condition of the country is favourable to the spread of venereal disease, though from several of the localities where we sought special information the answers were quite reassuring. In this connexion a well-informed correspondent suggests to us that attention should not be wholly focused on the new recruits, and that the very considerable temptation which lies round the path of the convalescent wounded must not be forgotten.

THE WAR AND THE CRUDE DRUG INDUSTRY.

THE likelihood of a scarcity in certain drugs as a result of the war is not confined to the synthetic products which have hitherto mostly emanated from German laboratories. English pharmacists have hitherto been to a very large extent dependent upon imported supplies also of crude vegetable drugs—aconite, belladonna, chamomile, digitalis, hydrastis, hyoscyamus, and valerian may be cited as examples. Yet some of these grow naturally in various parts of our islands, and probably those that do not could be cultivated. Centuries ago there were many "physic gardens" in England, chiefly in connexion with monastic houses or with the establishments of noblemen. Drug farms exist to-day in several parts of this country, but for the most part the Central European countries—Germany, Austria, and Switzerland—have sent us raw material for our vegetable medicinal preparations. The Board of Agriculture and Fisheries has now issued a very timely leaflet (No. 288) on the "Cultivation and Collection of Medicinal Plants in England," and instructions are given for the farming of such plants as an industry. It is pointed out that already since the war the price of belladonna has risen more than 100 per cent., and of many other drugs to a lesser degree. Owing, however, to the limited outlet for drugs overloading of the market is an easy matter, and coöperation between the producer and the manufacturer is counselled, as has already been advantageously practised in cinchona bark production. Of course, for those who intend to embark on the pursuit, a drying plant heated artificially is essential. The south of England is said to be especially suitable for drug-growing. It is suggested in the leaflet that a considerable demand will occur next year for many of the commoner British wild plants and other medicinal herbs that grow wild in the country, and this may open up a prospect for herb collectors, to whom farmers and landed proprietors might be induced to give access to their fields. This, of course, would only be a temporary measure that would help to meet the coming deficiency and incidentally give employment at rates more remunerative than hitherto to a certain number of competent persons; but there is every reason why in this direction, as well as in others, the opportunity afforded by the war to render ourselves less dependent upon Austria and Germany and to supply our own drug markets with home-grown products should be taken advantage of, and ultimately foreign markets might be created.

THE ATLANTIC WINTER RESORTS.

IN a generous response to an appeal by Dr. Michael C. Grabham, of Madeira (who writes from the Union Club in London), on behalf of officers invalided during the present war, the Government of Portugal have consented to make an important concession in the administration of their fiscal system. Orders have been issued which will enable visitors to enter the country freely with all their requirements for domestic use, provided that there is no intention to trade or to introduce spirits or tobacco into the country. It is obvious that the Portuguese realise that the south of Europe is not accessible just now, and that the opportunity of popularising their attractive resorts at the mouth of the Tagus—namely, Mont Estoril and Cascaes—should not be lost, and also that it would be politic to make their island of Madeira freely available to those of our sick and wounded whose convalescence may be furthered by genial climatic conditions. All these Portuguese resorts are now well equipped with good water and the food-supply is abundant, while the Union Castle and Royal Mail lines of steamers offer excellent means of communication. We hope Dr. Grabham may succeed in obtaining from the Red Cross and other funds assistance in mitigating the cost of travelling and hotel life for those who have lost their health in the service of our country, and who may wish to take advantage of the practical abatements in their favour offered by Portugal.

THE DIAGNOSIS OF PANCREATIC DISEASE.

THERE are wide variations in the character of symptoms referable to disturbed functions of the pancreas, and as long as knowledge of its purely physiological actions is incomplete it is difficult to trace to abnormal activity of this gland such general conditions. Definite signs due to the pancreas have, however, been recognised: the "acute" abdomen (hæmorrhagic pancreatitis) in some cases; in others, general wasting or deep-seated epigastric pain or "massive stools" or jaundice is noted. Diabetes, too, claims a relationship to the pancreas. Careful investigations of those functions of the gland more easily detected, together with clinical signs, are, however, accumulating evidence suggestive of glandular responsibility, and a valuable critical review of our present means of estimating pancreatic disturbance has been given by Dr. A. F. S. Sladden in the *Quarterly Journal of Medicine* (1914, vol. vii., p. 455). In the first place it may be said that no single test can alone afford infallible evidence. Several are necessary, but that this should be so is no proof that such collective data are not valuable, and it appears that reasonable conclusions may be reached by these means. The tests employed are many. They are directed to two ends: tests of external secretion and tests dependent upon other functions of the pancreas. The former concern the intestinal tract; the latter such investigations as the diastatic ferments in the urine, glycosuria, actual or potential, and adrenalin mydriasis. Each test has been reviewed by this writer in turn, and his conclusions are worth recording in a few words. Four tests aim at investigating the pancreatic juice in the neighbourhood of the duodenum. The presence or absence of trypsin (the latter signifying pancreatic disease) is detected by means of the oil-test breakfast, which causes a regurgitation of duodenal contents through the pylorus, thus enabling them to be examined—"worth an extensive trial." Duodenal intubation "from the standpoint of the practical clinician ...... open to serious objections." Sahli's test, the principle of which consists in giving a capsule containing a substance demonstrable on general absorption, the capsule being digested mainly by the pancreatic juice, and the rapidity of absorption indicating the efficiency of the gland—"value of the test very doubtful." Schmidt's beef-cube test: "evidence for reliability ...... not very convincing." Examination of fæces presents more favourable opportunities. Excess of nitrogen, "azotorrhœa," is "certainly a common feature of pancreatic disease ...... pancreatic insufficiency is the most usual cause ......" The test is, however, rather laborious. Creatorrhœa, the presence in the fæces of undigested muscle fibres, is a condition which is described as "not free from fallacies," though of "great positive significance if these are excluded." Steatorrhœa, the passage of fat in the stools, is recognisable as excessive only by microscopic aid, and chemical analysis is held to be more satisfactory. This subject is entered into fully. Amongst the conclusions as to its value it is stated that "in general, if the total fat be much over 30 per cent. of the dried fæces one suspects pancreatic insufficiency, biliary insufficiency, or intestinal anomalies of absorption or peristalsis." Glycosuria, "in conjunction with other signs, a lowered glucose tolerance lays the gland under grave suspicion, although absence ...... of alimentary glycosuria affords no proof of a healthy pancreas." Against the Cammidge test "the balance of opinion appears to be adverse," but the author thinks that it may lead to further knowledge. Of excess of diastase in the urine he writes: "There appears to be no doubt that a high diastatic value of the urine offers considerable presumptive evidence in favour of pancreatic disease, whilst a low or normal value, provided there is no renal disease, indicates a healthy pancreas." The adrenalin mydriasis test of Loewi "surpasses all in the ready and simple manner of its performance." Dr. Sladden, however, thinks it rash to lay too much stress upon the pancreas alone in this connexion. An extensive list of references adds value to the article. The conclusion suggests that several such tests, or even a few, such as the last and perhaps the diastase test of the urine, both of ready clinical application, applied on many cases must become established as of collectively considerable value.

VITAMINES.

RECENT workers appear to be attaching an immense importance to vitamines in regard to their rôle in general metabolism. Further research, indeed, is tending to show that it would be profitable to study their action from a pathogenic point of view. It is suggested, for instance, in a valuable paper on Vitamines, by H. W. Bywaters, D.Sc., published in the October number of *Science Progress*, that in cancer, in which we have a pathological new growth of tissue, a special vitamine may be concerned. The question as to whether it is possible to inhibit this new growth by careful regulation of the diet with the view of excluding the vitamine has been raised. Experimental investigation at any rate so far seems to show that the vitamines for normal and cancerous growths are not identical, and it may prove to be possible to institute a diet that shall allow normal growth to proceed but which shall inhibit cancerous growth. Dr. Bywaters suggests that the minuteness of these vitamines which are requisite to maintain normal processes of life would appear to indicate that they have something to do possibly with the production of some of the essential hormones, internal secretions, enzymes, and so forth, in the animal organism. According to careful post-mortem examination of polyneuritic pigeons Casimir Funk found that this condition is associated with an extreme atrophy of the thymus, which suggests that the vitamine in rice has to do with the stimulation of this organ which evidently exerts its chief functions during the period of growth. Altogether the relationship which appears to exist between vitamines and metabolism calls for a continued study of these interesting bodies. So far the recognition of their peculiar properties appears to threaten our rudimentary physiological principles. Consider, as Dr. Bywaters suggests, the transformation of carbohydrate into fat which takes place on such a large scale where animals for market are fed on starchy foods. The starch and soluble carbohydrates in all such foodstuffs are reduced to glucose in the alimentary tract of these animals, and yet the food containing the largest amount of assimilable carbohydrate is by no means necessarily the most fattening. This would appear to show that something else is necessary to bring about the change from glucose to fat, and the suggestion is that this is a vitamine present in the different foodstuffs contained in the outer layers of the grain. The remarkable instance is further quoted of the difference in the fattening properties of two well-known adjoining fields in the Romney marshes. The vegetation is apparently identical, but the deduction is that in one case a vitamine is at work and not in the other. Further evidence is wanted, and it is to be hoped that this direction of research will be vigorously pursued in view of the great importance of the issues involved.

THE WAR AND MEDICAL STUDIES.

THE effect of the war upon the ancient universities has been very marked. Dr. A. E. Shipley, the Master of Christ's College, Cambridge, has drawn our attention to the significant figures at that university. The matriculations at Cambridge were only 665 as against 1110 last year. Almost exactly 50 per cent. of the usual number of members in residence are away, the proportion of absentees at various colleges being from 71 per cent. at Pembroke to 26 per cent. at St. Catharine's, the proportion naturally being greatest in the case of those colleges having a high reputation for athletics. In the Cambridge Medical School the figures are such as to give some ground for uneasiness. The number of medical students entered this year is only 64 as against an average of 113 in the past three years, and even of these entries it is said that at one college noted for scientific studies only 17 out of 32 entered as medical students have come into residence. The *Times* correspondent at Oxford says that only 600 men have matriculated this October, but last October 1000 new undergraduates came into residence, and the diminution among the senior students is even more marked, the medical faculty sharing in the depletion. The University of Edinburgh, which, as at Cambridge, boasts a large medical school, is 700 men short at least. We are not yet in possession of sufficient detailed statements from the London, provincial, Scottish, and Irish medical schools to enable us to determine to what extent the deficiencies in the number of those training for medicine at Cambridge are representative of medical schools generally, but it is easy to see that if anything like a similar deficiency occurs elsewhere there must presently arise a serious shortage in the personnel of the medical profession in this country. It is not to be wondered at, in the least, that the call to arms should appeal with almost resistless force to such a body of high-spirited, physically fit, and energetic young men as are the medical students for the most part of the present day. But there is much justification at any rate for the feeling that has been expressed by the General Medical Council that the first and paramount public duty of the medical student is to complete his course and to qualify as early as possible. It must be remembered that time is of the essence of the matter in the preparation of the doctor. It is not merely one of several desirable requirements, which may, however, on adequate emergency be dispensed with without affecting the result. It is, therefore, in the highest degree desirable that the ranks of the future medical profession shall not be exhaustively drained through the abandonment, even though temporary, of their curriculum by too large a proportion of those in training for medicine.

HUMAN AND BOVINE INFECTION IN TUBERCULOSIS.

In view of the doubt that still exists as to the importance of infection derived from cattle in the production of tuberculosis in man attention may be directed to a useful summary of the cases hitherto published which bear on this problem, compiled by Park and Krumwiede[1] and published in the Reports of the New York Health Department. The total number of cases reviewed is 1511, of which over half (831) were cases of pulmonary disease. In this group bovine infection appears to be almost negligible, only four among this large number of cases showing infection from this source. Again, no instance of bovine infection was discovered among nine patients who suffered from tuberculosis of the axillary or inguinal glands, a remarkable contrast to the group of cases exhibiting cervical adenitis in which so far as subjects under 16 years of age are concerned the figures for the two sources are not far from equal—viz., 51 human and 44 bovine. If we take together all cases in which the infection appears to be abdominal in origin a still more noteworthy proportion is due to bacilli derived from cattle and presumably taken into the system with infected milk. Thus, taking all ages together there are recorded 66 of human infection against 59 of bovine, while in children under 16 there are 34 of the former to 52 of the latter—a striking preponderance. On the other hand, in opposition to the view which has been advanced that tuberculosis of bones and joints, a common affection of children, is of bovine origin, it appears that only 4 cases out of 104 of such disease at all ages were of this nature. Taking the whole number of the cases together, there were 1363 of human origin, 137 of bovine, and 11 instances of mixed infection. The importance of tuberculous milk in the causation of infection of the cervical glands is borne out by the researches of Mitchell[2] at the laboratory of the Royal College of Physicians, Edinburgh, who found that of 80 cases of cervical adenitis in children 71, or 88 per cent., were due to bovine infection. Of 12 fatal cases of tuberculosis in children, 4 in which the disease appeared to originate in the mesenteric glands were due to the same source, while 7 in which the bronchial glands were the seat of origin, and 1 case of genito-urinary disease in which the seat of original infection was not ascertainable, were caused by the human type of bacillus. Examination of the milk-supply of Edinburgh showed the presence of tubercle bacilli in 20 per cent. of the samples taken. The view generally prevailing in this country, therefore, that infection from a bovine source is a comparatively rare but by no means negligible danger, is on the whole substantiated, as against the position originally adopted by Koch that the disease in cattle is of little or no importance as a source of human tuberculosis.

AN UNCANNY EFFECT OF SHELL ARTILLERY.

More than once in the accounts of the present war reference has been made to the use of shells which on exploding deal out death on all sides, leaving the victims fixed in their last attitude of life. They are said to have been left in life-like groups, remaining in exactly the position in which they died, some in the act of shooting still levelling the rifle, others dictating despatches, others lighting a cigarette, and so forth, the whole suggesting a group of waxwork bodies at Madame Tussaud's. That dead bodies can remain in the upright position without support from without is, of course, absurd, but it is interesting to point out that the favourite modern explosive is tri-nitro-toluol, and this gives off incidentally a large volume of carbon monoxide gas, which when inspired produces a healthy pink and life-like appearance in the corpse. Imagination has probably filled in the picture as to these victims appearing to retain a living posture. It will be remembered that carbon monoxide rapidly forms a characteristic compound with the hæmoglobin of the blood, which then assumes a pink, rosy colour, owing to the formation of carboxyhæmoglobin. If a puff of tobacco smoke be directed upon a film of blood the change from red to pink is easily observed. Tri-nitro-toluol is obtained in crystalline form by the action of nitric acid on toluol, an analogue of benzene, and obtained by rectification of coal tar. The shell is filled by simply pouring the melted crystals into it, the mass then being allowed to solidify. It burns quite harmlessly and with the production of dense volumes of smoke when a light is applied to it. To get its explosive effect a detonator is employed, which is generally fulminate of mercury. Owing to the fact that it does not contain sufficient oxygen in its own molecule to burn the carbon and hydrogen completely into carbonic acid gas and water respectively, a considerable volume of carbon monoxide is produced, which may be accountable for the stories about its victims having the appearance of being alive.

CHOLERA IN AUSTRIA.

In spite of official attempts to reassure the public, says a well-informed correspondent, it seems that the cholera epidemic in Austria-Hungary has assumed serious proportions. An official communication from the Medical Department of the Ministry of War, dated Oct. 12th, refers to cases which have occurred at Vienna and Budapest, and at eight or nine provincial towns. *Die Zeit*, of Vienna, published on the following day a statement from a Budapest doctor who, while dismissing any grounds for panic, admits that the epidemic has been on a considerable scale. He ascribes the outbreak entirely to the presence in Hungary of Russian and Serbian prisoners and fugitives from the eastern provinces of the Dual Monarchy. "The area in which the epidemic has raged is a large one," our correspondent continues, "because insufficient precautions were in the first instance taken at the various concentration camps. But good results have now followed the strenuous efforts that have been made by the Hungarian doctors to combat the outbreak—efforts which have been seconded by the civil and military authorities. Prisoners now reaching Hungary are no longer allowed to pass at once into the concentration camps, but instead are domiciled in specially constructed wooden prisons and hospitals, where they are kept under a very close observation for a considerable time. Later on, if no symptoms are discovered the prisoners are transferred to the concentration camps. The deaths are less frequent and it seems certain that the worst is over." Less reassuring reports, however, continue to reach Switzerland of the extent and ravages of the epidemic. It is stated on good authority, for instance, that as many as 150 deaths from cholera have already occurred in one of the smaller Hungarian towns. The funerals of the victims, it is added, take place secretly at night.

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[1] The Relative Importance of the Bovine and Human Types of Tubercle Bacilli in the Different Forms of Tuberculosis. Collected Studies from the Bureau of Laboratories, Department of Health, City of New York. Vol. III. 1912-13.

[2] A Bacteriological Study of Tuberculosis of the Lymph Glands in Children, Edinburgh Medical Journal, September, 1914.

Sir Alfred Pearce Gould has been appointed by the Senate of the University of London to act for the Vice-Chancellor, Sir Wilmot Herringham, during his absence at the seat of war as consulting physician to the British forces. Sir Bertrand Dawson has been elected Vice-Dean of the medical faculty of the University, Sir Alfred Pearce Gould being re-elected Dean.

Sir W. Watson Cheyne, President of the Royal College of Surgeons of England, will open a discussion at the Medical Society of London on Nov. 16th, at 8.30 P.M., on Surgical Experiences of the Present War. Mr. E. E. Austin, being absent on active service, will be unable to read the paper announced for Nov. 9th.

THE Bradshaw Lecture of the Royal College of Physicians of London will be delivered by Dr. Nestor Tirard on Nov. 3rd, the subject being The Study of Glycosuria. The FitzPatrick Lectures of the College will be delivered on Nov. 5th and 10th at 5 P.M. by Dr. Charles Mercier, who has chosen as his subject Leper Houses and Mediæval Hospitals.

Dr. Norman Moore, Honorary Fellow of St. Catharine's College, will deliver the Rede lecture in the Senate House of the University of Cambridge on Thursday, Nov. 12th, at 5 P.M., upon St. Bartholomew's Hospital in Peace and War.

Professor C. S. Sherrington has been elected to a professorial seat upon the Hebdomadal Council of the University of Oxford.

MEDICINE AND THE LAW.

A Quack Convicted of Manslaughter.

AT the Central Criminal Court Mr. Justice Rowlatt passed a sentence of three months' imprisonment in the second division upon Orlando Edgar Miller, convicted of the manslaughter of Miss Kate Addison Scott, a lady who was admitted to a house kept by the prisoner under the title of the "Miller Institute." Miss Scott suffered from paralysis and was treated by Miller, who appears to have described himself as a lecturer on "Higher Thought" and "Faith Healing," with various drugs, including hyoscine. Dr. W. H. Willcox in giving evidence for the prosecution ascribed death to "paralysis of the stomach and exhaustion caused by general treatment—namely, the lack of food during the early period, the administration of purgatives, and repeated injections of hyoscine." The prisoner, giving evidence on his own behalf, stated that he was an American, and claimed to have been employed by the authorities of the City of Chicago to treat persons addicted to the use of drugs and intoxicants. He stated that he had there had under his care in 18 months 1700 cases of delirium tremens, and that he had been successful in diminishing the death-rate from that cause from 80 to 1 per cent., his methods being favourably recognised by many physicians in the United States. The jury, however, convicted, and Mr. Justice Rowlatt, in passing sentence, congratulated them upon having done so. His lordship said that the conviction was of importance as showing persons who with no knowledge or with the little knowledge (which, he pointed out, is more dangerous than complete ignorance) undertake to deal with dangerous poisons that they could be found guilty of a crime in spite of rhetoric and tall talk about cures, about a wonderful mental treatment, about the "unity of the infinite and all that sort of stuff." The verdict showed that a British jury, when it found that someone had been subjected to deadly poison by an incompetent person, would go straight to the business mark and say it was manslaughter. He referred to the lightness of the sentence that he was passing upon this occasion, and intimated that if any similar case came before him in future he should not be so lenient. This warning may be commended to the consideration of many unqualified persons now endangering the lives of patients with apparent impunity.

Keats v. *Bracey Wright.*

After a trial lasting five days before Mr. Justice Bray and a special jury Mr. W. J. C. Keats recovered a verdict for £300 damages for libel against Mrs. C. A. R. Bracey Wright (Countess de Lormet) and her son, Mr. W. H. C. Bracey Wright. At the first hearing of the case the jury disagreed. The statements complained of alleged that the plaintiff had flogged with a "five-tailed lash" convalescent children in the Camberwell Infirmary, of which he is medical superintendent, and that a practice of flogging prevailed at the infirmary, the accusations being contained in an election address issued in connexion with the defendants candidature for the Camberwell board of guardians. The defendants pleaded that the statements complained of were true, and that the opinions expressed were fair comment upon matters of public interest. Mr. Keats in his evidence explained that during the 16 years he had been superintendent of the infirmary he had corrected four or five boys for continued bad behaviour, using the indiarubber tubes of a stethoscope or five strands of string tied together. Certain specific allegations with regard to the alleged chastisement of particular children he denied altogether. A series of questions was left to the jury by the learned judge, the findings on all points being in the plaintiff's favour, and judgment was given for the sum above mentioned with costs, subject to a stay of execution on terms with a view to an appeal. A rider to the verdict recommended that the correction of children in the infirmary should be reported at the next meeting of the guardians. This, it was stated by counsel, was the course now pursued at Camberwell. Mr. McCall, K.C., and Mr. A. Neilson, instructed by

Messrs. Le Brasseur and Oakley for the London and Counties Medical Protection Society, appeared on behalf of the plaintiff, and the society, as well as Mr. Keats, are to be congratulated upon the complete vindication of the latter's character thus achieved after prolonged litigation.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL REPORT OF THE COUNCIL.

THE annual report of the Council of the College, which is to be presented to the annual meeting of Fellows and Members on Thursday, Nov. 19th, has now been published, and contains a record of the work accomplished by the College in its various departments during the year ending August 1st, 1914. The resolutions which were carried at the last annual meeting are recorded, together with the replies of the Council. At the meeting of the Council in March a motion was brought forward to the effect that the time had arrived when steps should be taken to enable Members to vote for the election of a limited number of members of the Council, but after a prolonged discussion this was negatived by a large majority. In February the Council were asked to take part in a deputation to the Government on the position of medical officers of health as regards security of tenure and superannuation. While declining this invitation the Council asked the President to consult with representatives of the Society of Medical Officers of Health, and after this had been done a letter was addressed to the President of the Local Government Board dealing with the question solely from the point of view of public advantage. After impartial consideration of the arguments against the proposed change the Council stated that these were not in their opinion strong enough to outweigh those in favour of the request by medical officers of health for security of tenure with a corresponding system of superannuation. Much dissatisfaction having been expressed by medical men with the suggested employment of non-qualified persons for the purpose of medical treatment under the National Insurance Act, a protest was submitted on behalf of the College to the English Insurance Commission. This protest and the reply to it are printed in the report. During the year Mr. F. Richardson Cross, Mr. D'Arcy Power, and Mr. S. G. Shattock were appointed by the Council to give evidence before the Royal Commission on Venereal Diseases: Mr. Cross giving evidence as to the effects of syphilis upon the eyes; Mr. Power on the general effects of syphilis; and Mr. Shattock upon the remote pathological effects of syphilis, the Wassermann test in the diagnosis of late effects of syphilis, and the latent distribution of syphilis.

The first annual Congregation of the American College of Surgeons at Chicago on Nov. 13th, 1913, was attended by the President, Sir Rickman Godlee, and an address of congratulation from the English College was presented. Sir Rickman Godlee also visited Toronto, where the degree of LL.D. was conferred upon him, and on his departure from New York he was presented with the gold medal of the National Institute of Social Sciences, of which he was made an honorary member. In connexion with the fifth annual session of the Clinical Congress of Surgeons of North America held in London at the close of July last demonstrations at the College were given by Professor Arthur Keith, Mr. S. G. Shattock, Sir Rickman Godlee, Mr. J. F. Colyer, and Mr. Arthur H. Cheatle, while a reception for the members of the Congress was held in the College on the afternoon of July 29th.

With regard to the Licence in Dental Surgery, it is announced that examinations will be held in future thrice instead of twice a year. The examination for the Diploma in Tropical Medicine and Hygiene, granted jointly by the College and the Royal College of Physicians of London, will in future be divided into two parts, and amended regulations have accordingly been adopted. The Jacksonian prize for the year 1913 was awarded to Mr. J. Howell Evans. The subject for the year 1915 is Congenital Dislocations of the Joints, their Pathology and Treatment. The subject for the present year is the Pathology, Diagnosis, and Treatment of Trigeminal Neuralgia, and dissertations must be delivered at the College not later than 4 o'clock P.M. on Thursday, Dec. 31st, 1914. The first award of the Sir Gilbert Blane medal under the revised regulations was made to Surgeon G. F. Syms, R.N.

The financial statement shows that the gross income of the College, exclusive of the income from trust funds, amounted to £26,833, an increase of £819 on the amount for the previous year, while the expenditure in respect of revenue amounted to £21,425, a decrease of £836 on the previous year. The receipts and expenses in connexion with the trust funds are placed this year in a separate account. While it is evident that the College is in a good financial position at the present time the Council consider that it is most important to add to its invested funds for several reasons. Among these may be mentioned: (1) the insecurity of the income derived from examination and diploma fees; (2) the continued increase in rates and taxes; (3) the growth of the museum and library and consequent increase in cost of upkeep; (4) the probability that, in course of time, it will become necessary to make extensive additions to the College buildings, at a large capital outlay, to provide further accommodation for the museum and library. During the year the number of diplomas issued was as follows: Membership, 408 (including 8 women); Fellowship, 71; Licence in Dental Surgery, 110; Diploma in Public Health, 62 (including 5 women); Diploma in Tropical Medicine, 4.

On July 9th Sir William Watson Cheyne was elected President of the College, and Sir Frederic Eve and Sir Anthony A. Bowlby Vice-Presidents.

Four years ago the Council sanctioned a scheme for the recataloguing and rearrangement of the entire pathological collection in the museum. The work of revision in the section of general pathology, to which Mr. Shattock and his assistant, Mr. Beadles, first devoted themselves, has now proceeded far enough to make this part of the museum particularly worthy of study by medical practitioners and students. As now arranged the collection of general pathology occupies 32 cases, and four more will be added. The report contains a list showing the main contents of each case, while attention is drawn to the changes, improvements, and additions which are being carried out in the physiological section which is really the counterpart of the series illustrating general pathology. The various donations of specimens made to the museum during the year are referred to in the report, and the significance of the more important of these is pointed out. It is noted that the number of visitors to the museum has considerably declined, which is partly explained by the precautions taken to admit only those who come for the purpose of serious study or enlightenment. During the period under review the supply of books and periodicals to the library was well kept up. The volumes in the library were counted early this month and were found to number 66,525. The tracts and pamphlets bound in volumes of from 10 to 20 each are estimated at about 45,000, of which number two-thirds are catalogued.

ANNUAL MEETING OF FELLOWS AND MEMBERS.

A meeting of Fellows and Members will be held at the College in Lincoln's Inn Fields on Thursday, Nov. 19th next, at 3 o'clock P.M. The report of the Council, of which copies can be obtained on application to the secretary, will be laid before the meeting. Motions to be brought forward at the meeting must be signed by the mover, or by the mover and other Fellows and Members, and must be received by the secretary not later than Nov. 9th. A copy of the agenda will be sent on application after Nov. 16th.

LECTURE ARRANGEMENTS.

The Bradshaw Lecture for 1914 will be delivered by Sir Frederic Eve on Pancreatitis on Tuesday, Dec. 15th, at 5 P.M.

The Hunterian Oration for 1915 will be delivered by Sir William Watson Cheyne on Monday, Feb. 15th, at 4 P.M.

The Hunterian Lectures will be delivered as follows:—Professor H. Blakeway: One lecture on the Treatment of Hare-lip and Cleft Palate, Feb. 17th, at 5 P.M. Professor F. C. Pybus: One lecture on Some Infections of the Tonsil, Feb. 19th, at 5 P.M. Professor Arthur Keith: Six lectures on the Anatomy and Mechanism of the Alimentary Canal, Feb. 22nd, 24th, 26th, March 1st, 3rd, and 5th, at 5 P.M. Professor W. Sampson Handley: One lecture on Enterocolic Ileus, March 8th, at 5 P.M. Professor J. Howell

Evans: One lecture on Some Congenital Lesions of the Small Intestine, their Origin, Clinical Bearings, and Treatment, March 10th, at 5 P.M. Professor Rupert Farrant: Two lectures on the Effect of Toxins on the Tissues, March 17th and 19th, at 5 P.M.

The Arris and Gale Lectures will be delivered by Professor David Waterston: Two lectures on Further Recent Investigations in the Development of the Human Body, March 12th and 15th, at 5 P.M.; and by Dr. F. Wood Jones: One lecture on the Influence of the Arboreal Habit in the Evolution of the Reproductive System, March 22nd, at 5 P.M.

ASYLUM REPORTS.

County and City of Worcester Asylum (*Annual Report for the Year 1913–14*).—The total number of cases under treatment was 1221, the average number resident being 1069. There were admitted 142 patients, of whom 121 were direct admissions. Mr. G. M. P. Braine-Hartnell comments on the fact that in only 14·9 per cent. of the cases was a history of heredity obtained. Mental stress was noted in 15·7 per cent., senility in 10·7 per cent., and alcohol in 4·1 per cent. Sixty-six patients have been discharged, with a percentage of 32·2 of recoveries on the direct admissions. The deaths numbered 86, of which 22·1 per cent. were caused by heart disease, 17·4 per cent. by phthisis, and 15·1 per cent. by general paralysis. Mr. Braine-Hartnell remarks that the deaths from general paralysis have increased from 7·5 per cent. in 1912 to 15·1 per cent. in 1913. Post-mortem examinations were made in 85 per cent. of cases.

Bootham Park Hospital for the Insane, York (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 175, the average daily number resident being 127, of whom 59 were males and 68 females. There were 33 direct admissions and 12 voluntary boarders. There were 10 cases transferred from other institutions, all of which were chronic, and most of them bad cases. Dr. George R. Jeffrey, the medical superintendent, is of the opinion that change of surroundings to another asylum often greatly benefits these chronic insane patients. Of the patients admitted none was in good bodily health. Dr. Jeffrey believes that rest in bed in the open air is the most rational treatment for such cases. He has found the open-air treatment especially valuable in dealing with the noisy chronic insane. It generally does away with the necessity of seclusion and sedatives. In 18 cases of the admissions a distinct history of mental stress was obtained, and in eight the age epochs were considered to be causal. Several of the cases were associated with the presence of distinct bodily conditions of disease, which were thought to be the chief cause of the mental state—thus 1 occurred during gestation, 1 during lactation, 2 with disease of the thyroid gland, 1 with influenza, 1 with diabetes, and 1 with syphilis. Four cases presented physical signs of alcoholism, without which the diagnosis of alcoholic insanity is hardly permissible. During the year 26 patients were discharged, with 45·4 per cent. of recoveries. There were 5 deaths, the proportion to the daily average population being 4·06 per cent.

Mental Hospital for the County Borough of Leicester, West Humberstone (*Annual Report for the Year ending March 31st, 1914*).—The total number of patients under treatment during the year was 1067, the average daily number resident being 860. The number of admissions was 209. The following are the principal assigned causes of insanity in the admissions: heredity, 65; mental stress, 16; alcoholic intemperance, 13; senility, 11; epilepsy, 8; and syphilis, 6. Dr. J. Francis Dixon, the medical superintendent, remarks, in connexion with the causation and prevention of insanity, that the great majority of workers in this specialty are isolated from the general community and that their experience is largely confined to the care and treatment of mental disease arising in an environment with which they are but imperfectly acquainted. The psychological line of inquiry into the causes of certain forms of insanity is assuming an increasing degree of importance and the bearing of education, occupation, heredity, environment, and the rapidly changing conditions of life generally comprise fields of promising investigation. Until such trained investigation becomes general the mass of information returned annually to the commissioners, upon which are based their statistics, must of necessity lead to very unreliable conclusions. The number of deaths was 77; and in every case the cause of death was verified by post-mortem examination. The average death-rate was 8·95 per cent. Heart disease was the cause of death in 20 cases and phthisis in 7 cases.

Royal Edinburgh Mental Hospital, Morningside (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 1022, the average daily number resident being 773. The admissions numbered 238, and in 40 per cent. of these hereditary influences were found to be present. Senile decay was also a very noticeable feature among the admissions. Nearly 1 in every 9 admitted was over 70 years of age. Alcohol was believed to have been the exciting cause in 12·5 per cent. of the male cases and in 11·5 per cent. of the female cases. The fourth most frequent cause of insanity appeared to be syphilitic infection, which in the case of men occupies a position second only to hereditary influences, and equal in importance to alcoholic excess. Dr. George M. Robertson, the physician-superintendent, refers to the surprising information that has been obtained from the routine examination of nervous and mental cases by the Wassermann method. In an examination of 200 cases of mental deficiency, undertaken by Dr. Kate Fraser and Dr. Watson, it was found that more than half of these, of every grade of severity, suffered from syphilis. The astounding nature of this revelation can be judged by the fact that if any standard work on mental deficiency be consulted the statement is made that this disease is not an important cause of idiocy or imbecility, and that 5 per cent. would more than cover the cases to be attributed to it. The discharges numbered 59, with a recovery rate of 25 per cent. on the total number of admissions. The test of recovery employed has been a severe one. The total number of deaths was 82, making a percentage of 10·6 on the average number resident. Twenty-two of the deaths were due to general paralysis and 7 to consumption. Dr. Robertson then goes on to consider the question as to whether insanity, or rather the liability to insanity, is increasing, basing his remarks on consideration of the statistics of institutions and the reports of the 1911 Census. He takes into full account statistical fallacies, and he comes to the conclusion that there has been during the last decade a proportionate increase in the number of insane persons living the early adult and late period of life, but a decrease during the middle period. There is reason to believe that the liability to suffer from mental disease may not have increased at the early and late periods, and may not have diminished during the period of middle age. It is at this middle period that the acquired or preventable insanities chiefly occur, and therefore it is at this period that the effects of temperance, self-control, adequate nourishment, and healthier surroundings would first appear. A new departure has been made this year in the institution, which is paying for the working expenses of a physician, who receives a grant from the Carnegie Trust, whose sole duty it is to visit the homes and families of the parochial patients sent to the institution. For the first time in this country, a detailed investigation by the personal inspection and inquiries of a medical man is being made into the possible hereditary and environmental causes of the insanity of the cases admitted. The importance of this measure cannot be over-estimated.

Hertfordshire County Asylum, St. Albans (*Annual Report for the Year ending March 31st, 1914*).—The total number of cases under treatment during the year 1913 was 1008, the average daily number on the register being 836. The direct admissions numbered 152, and of these 100 were first attack cases. The recoveries amounted to 59, 53 of whom had been direct admissions in 1913 and previous years. The proportion of recoveries to the direct admissions in 1913 was 34·9 per cent. The average for the last 13 years has been 31·7 per cent. A more reliable percentage of recoveries is given by separating the "first attack cases" from the "not first attack" cases and imbeciles. The percentage of recoveries of the first attack cases from 1901 to 1913 inclusive was 30·6 per cent., and that of the "not first attack" cases for the same period 46·7 per cent. The deaths numbered 38 men and 31 women, a percentage of 8·25 on the average daily number on the register. Post-mortem examinations were made in 63 cases. Phthisis accounted for 6 deaths and heart disease for 8.

THE SERVICES.

Royal Navy Medical Service.

THE following appointments have been notified :—Deputy Surgeon-General : O. W. Andrews, retired, to the *Revenge*, on commissioning. Fleet Surgeons: G. Hewlett, retired, to Portsmouth Dockyard; and O. Rees and K. H. Jones to the *Pembroke*, additional, for disposal. Staff-Surgeons: P. T. Nicholls and W. R. Harrison to the *Victory*, additional, for disposal; and J. H. Lightfoot to the *Pembroke*, additional, for the *Cornwallis*, on commissioning. Temporary Surgeons: H. J. McCaw to the *Revenge*, on commissioning; F. P. Pocock to the *Colossus;* A. Todrick to the *Collingwood;* W. W. Rorke to the *Hercules;* A. J. MacDiarmid to the *Vanguard;* A. D. E. Bayliss to the *Iron Duke*, for the *Oak;* J. Rothwell to the *Commonwealth;* G. E. W. Lacey to the *Dominion;* A. C. Morson to the *Zealandia;* H. C. Waldo to the *Lowestoft;* H. L. G. Foxell to the *Cornwallis*, on commissioning; W. L. M. Goldie to Royal Marine Infirmary, Deal, temporary; W. R. E. Unthank to the *Wildfire*, additional, for R.N. Barracks and Sheerness Dockyard; B. H. Pain and E. I. Parry to the *Vivid*, additional, for disposal; B. Malaher to the *Wildfire*, additional, for disposal; A. B. Slater, H. Harvey, and N. F. Lloyd, all to the *Pembroke*, additional, for Chatham Hospital, additional; E. R. Bailey, W. D. Galloway, G. C. Fairchild, S. L. Harke, and E. H. Hugo, all to the *Vivid*, additional, for Plymouth Hospital, additional; and P. D. Brownfield to the *Victory*, additional, for Haslar Hospital, additional.

The undermentioned have been appointed Surgeons for temporary service in His Majesty's Fleet:—Alfred F. Adamson Henry Graeme Anderson, Walter Martin Ash, Edwin R. Bailey, Alfred D. E. Bayliss, Henry Cecil Billings, Thomas S. Bradburn, Horace George Brown, Owen D. Brownfield, Ronald Edgar Russell Burn, Henry Lambert D'Olier Duckworth, George C. Fairchild, Edward Low Fisher, R. S. French, William D. Galloway, Walter Leigh Mackinnon Goldie, Peter Morris Grundy, George Hamilton, Sydney L. Harke, Maurice H. de J. Harper, Harold Harvey, Edward H. Hugo, William 'John Jago, Reginald H. Knowles, Nigel F. Lloyd, Hugh J. McCaw, Bruce Malaher, Charles A. Masson, Thomas R. G. Melrose, Gavin Denholme Muir, Thomas Norman, Max Onslow-Ford, Harry G. Parker, Basil H. Pain, Evan Parry, Basil Alfred Playne, John Rothwell, James Alexander Russell-Cargill, Alexander Scott, Frederick G. L. Scott, Harold Munro Scott, Alan B. Slater, Geoffrey Sparrow, John Spencer-Daniell, G. Charles Henry Shinglewood Taylor, Edward M. Thomson, Reginald W. Townley, William R. E. Unthank, Henry Cecil Waldo, Llewellyn R. Warburton, Henry Wilks, and Norman Valentine Williams.

Royal Naval Volunteer Reserve.

Surgeon: L. C. D. Irvine to the *Pembroke*, additional, for the *Cornwallis*, on commissioning. Probationary Surgeons: J. A. D. Skinner to the *Dido*, additional, for the *Leonides;* and A. G. G. Guinness to the *Hecla*, additional, for the *Shark*.

Army Medical Service.

Colonel Michael W. Russell to be Deputy Director-General and temporary Surgeon-General, vice Surgeon-General W. G. Macpherson, C.M.G., H.P.K. (dated Oct. 15th).

Royal Army Medical Corps.

Regular Forces.

The undermentioned Captain to be Major: Charles W. Holden (dated Sept. 1st).

Ulster Division:—Divisional Field Ambulance, 3 Field Ambulances (9 Sections): The following temporary appointments and rank are approved :—To be Lieutenants: Dated Oct. 9th: W. R. M'Kenzie, A. J. Best, W. K. Caldwell, S. Pinion, and H. G. Wilson.

Supplementary to Regular Units or Corps.

Royal Army Medical Corps.

The undermentioned to be Lieutenants (on probation) :—William Semple Wallace and Arthur Ashton Smalley.

New Army.

Royal Army Medical Corps.

Robert Stuart Rodger, late Captain R.A.M.C., to be temporary Captain (dated August 4th). Lieutenant Treffry O. Thompson is confirmed in his rank.

The undermentioned to be temporary Lieutenants: Adrian Stokes, Wilfred Thomas Chaning-Pearce, John Hewat, Robert Haig Spittal, Hubert Wybrants Powell, Edward Archibald Walker, Thomas Strethill Wright, Ernest White, Edward Cawardine Gimson, William Evershed Wallis, William Wood Forbes, Robert Kennon, Francis Eldon Daunt, David James Sheires Stephen, Philip Adams Opie, Charles Gordon Timms, Guy Annesley Carter Mitchell, Edgar Grey, John Fleming, Gordon Stewart Woodman, Charles Henry Robson, John Polson Davidson, William Peat Hogg, Thomas Fehily, George Wilson, John Scott, James Walter McLeod, Bryce McCall Smith, Lewis Anderson, Mark Bates, John Cattanach, Henry Goulding Rice, David Reid Eccles Roberts, Victor Donald Orr Logan, Ernest Nedwons Snowden, William Poole Henley Munden, James Fraser, Kenneth Grant Fraser, John Samuel Levis, David Robertson Mitchell, Denis Jeffcott Stokes, Charles Mollyson Smith, John Henry Victor Scott, Francis Joseph Wisely, Harold McAllum, John McLean Pinkerton, William Claughton Douglass, Patrick Kennedy Murphy, Alan Wilson, Malcolm King Acheson, Reginald William Gemmell, Alexander Anderson, Carl Keating Graeme Dick, William Gordon Gordon, John Eric Stacey, John Vere Orlebar Andrew, John Spence, John Peter Cahir, Ernest Frederick Charles Dowding, Thomas Philips Cole, John Parkinson, John Hart McNicol, Reginald Joseph Wooster, William MacKenzie, Charles Michael Foster, Edward Whyte Alment, Cedric Rowland Taylor, Douglas William Hunter, James Stewart Somerville, Thomas Percy Lewis, Claude Gordon Douglas, John Wellesley Flood, Ralph Franklin Eminson, William Edward Hopkins, Robert Bruce Wallace, William Barrie Watson, John Capell, Spencer Jackson, James Alison Glover, Norbert Reader, Stanley Fenwick, William Ernest Fetherstonhaugh, Archie Reith Fraser, Wilfrid Victor Macaskie, James George Copland, John Maitland Forsyth, James Harris Connolly, John Patrick Egan, George Jackson, Christopher Elliott, Alexander Erskine Drynan, Henry Dewi Hampton Willis-Bund, Archibald Stirling Kennedy Anderson, James Warburton Brown, David Stanger Harvey, Edward Fortrey George Turnbull Heap, George Millar, Kenneth William Mackenzie, and Frederick William McMillan.

Temporary Lieutenant Bagot N. Blood relinquishes his temporary commission.

The undermentioned to be granted temporary rank as follows, whilst serving with the Welsh Hospital:—Temporary Lieutenants: Fergus Armstrong, Thomas Garfield Evans, Bernard Geoffrey Klein, and John Sydney Rowlands. Temporary Quartermaster and Honorary Lieutenant: Edward James August.

Indian Medical Service.

Medical Staff:—To be Medical Officer in Charge of a Hospital Ship: Lieutenant-Colonel G. H. D. Gimlette, C.I.E., I.M.S., retired (dated Sept. 11th).

Territorial Force.

Royal Army Medical Corps.

The undermentioned to be Captains: Henry Wade (late Captain, Unattached List for the Territorial Force). Captain George Burnside Buchanan, from the 4th Scottish General Hospital. William Brown from the 1st Scottish General Hospital. Raymond Vérel.

The undermentioned to be Lieutenants :—Lieutenant William J. M. Slowan, from the 2nd London Sanitary Company, Royal Army Medical Corps, Arthur Edmund Ironside, John Alexander Watt; Bayard Erle Thomas Randall to be Transport Officer, with honorary rank; Guy Reginald Baynes to be Quartermaster, with honorary rank; Charles Reynolds Woodruff, John Francis Wilcox Wyer, Wilfred Ralph Sadler, William Scarisbrick, Thomas Murray, William Hedley Jay to be Transport Officer, with honorary rank; Quartermaster and Honorary Lieutenant William A. Fish, from the 3rd London General Hospital, Royal Army Medical Corps, to be Quartermaster, with the honorary rank of Lieutenant.

2nd London Sanitary Company: Captain Charles Milton Fegen, from the list of Sanitary Officers available on mobilisation, to be Captain.

1st Eastern General Hospital: Charles Herbert Budd to be Captain.

4th London General Hospital: The undermentioned to be Lieutenants: Henry Park Ashe, Lennard Game, George William Shore, and John Everidge.

4th Southern General Hospital: Captain Gilbert J. Arnold resigns his commission.

2nd Western General Hospital: Captain Alexander Wilson to be Major.

Royal Horse Artillery:—Shropshire: Surgeon-Captain George Mackie to be Surgeon-Major (dated August 4th, 1914).

London Mounted Brigade Field Ambulance: Thomas Hillier Chittenden to be Major. James Wilson McIntosh (late Lieutenant, Royal Army Medical Corps, Territorial Force) to be Captain. The undermentioned to be Lieutenants: William Francis Smartt, Harold Edward Gibson, and Duncan Frederick Macrae.

Scottish Horse Mounted Brigade Field Ambulance: Major Samuel Macfarlane Sloan, from Attached to Units other than Medical Units, to be Lieutenant-Colonel. Hugh Richardson (late Captain R.A.M.C., T.F.) to be Major.

2nd Northumbrian Field Ambulance: Arthur Langford Bastable to be Lieutenant.

3rd East Anglian Field Ambulance: Major Josiah Oldfield to be Lieutenant-Colonel. Leonard Robert Tosswill (late Captain, 1st Wessex Field Ambulance, Royal Army Medical Corps) to be Lieutenant.

1st West Riding Field Ambulance: Captain Alexander B. S. Stewart to be Major.

2nd West Riding Field Ambulance: Captain Charles W. Eames to be Major (temporary).

2nd South Midland Mounted Brigade Field Ambulance: Captain Alfred W. Moore to be Major.

1st South-Western Mounted Brigade Field Ambulance: Major George Rodway Swinhoe, retired list, Territorial Force, to be Major.

2nd South-Western Mounted Brigade Field Ambulance: Louis Joseph Edward McHugh to be Lieutenant.

2nd West Lancashire Field Ambulance: Captain William Macdonald to be Major.

3rd West Lancashire Field Ambulance: Captain Ernest Knight, from the Territorial Force Reserve, to be Captain.

1st London (City of London) Field Ambulance: Eliezer Coplans and David Jobson Scott to be Lieutenants.

2nd London (City of London) Field Ambulance Hubert Charles Phillips (late Captain, Royal Army Medical Corps) (Volunteers) to be Captain. Honorary Lieutenant in the Army William Ernest Rielly to be Captain. William Gibbs Lloyd to be Lieutenant.

3rd London (City of London) Field Ambulance: Myer Coplans to be Captain. Stanley Wyard and Cedric Rowland Taylor to be Lieutenants.

5th London Field Ambulance: The undermentioned to be Lieutenants: Alfred Hugh Bell, John MacMillan, Hector Mackay Calder, and Maurice Ulick Wilson. Harold Marshall Lambert to be Transport Officer, with the honorary rank of Lieutenant. Herbert Ernest Balfern Ware to be Quartermaster, with the honorary rank of Lieutenant.

3rd Wessex Field Ambulance: James Kearney to be Lieutenant.

Welsh Border Mounted Brigade Field Ambulance: Captain Douglas C. L. Orton to be Major.

4th London Field Ambulance: John Muir (late Captain, Royal Army Medical Corps, Territorial Force) to be Captain.

6th London Field Ambulance: John Edmund Bishop Wells (late Surgeon-Captain, 1st Volunteer Battalion, The Bedfordshire Regiment) to be Major.

Eastern Mounted Brigade Field Ambulance: Lieutenant Claudius G. K. Sharp to be Captain and James MacBain Taylor to be Lieutenant.

3rd Highland Field Ambulance: Captain Alexander E. Kidd to be Major. The undermentioned to be Lieutenants: John Strathearn and George Bruce Killoh.

1st South Midland Field Ambulance: Gerard Thomas Andrewes Uthwatt to be Transport Officer, with the honorary rank of Lieutenant.

2nd North Midland Field Ambulance: Robert Burton Meikle Yates (late Cadet, Sedbergh School Contingent, Junior Division, Officers Training Corps) to be Lieutenant.

Home Counties Clearing Hospital: Major James S. Warrack to be Lieutenant-Colonel.

Attached to Units other than Medical Units.—Captain Henry A. Rudyard to be Major. Captain John R. Williams to be Major. To be Captains: Captain Thomas Mahon Morton, from the Territorial Force Reserve, Lieutenant Arthur L. Heiser, Lieutenant Arthur E. Gladstone, Henry Neville Burroughes (late Captain, 1st London (City of London), General Hospital, Royal Army Medical Corps), Henry William Laing, Lieutenant James L. Joyce, Lieutenant James McHoul, Wilfred Ernest Alderson (late Captain, Royal Army Medical Corps, Territorial Force), and Captain William Thomas Ritchie, from the 2nd Scottish General Hospital. To be Lieutenants: George Finch, Harold Fitzwilliam Comyn, Alfred Herbert Tresham Andrew, John Archibald Thomson, John Clarke, Alexander Anderson, Reginald Douglas Gawn, John Arthur Parsons, Dugald Charles Bremner, Sidney Herbert Clarke, Frank Herbert C. Watson, Robert McAdoo, Sydney James Clegg, George Herbert Hind Manfield, and John G. Morgan (late Lieutenant, 2nd Welsh Brigade, Royal Field Artillery).

DEATHS IN THE SERVICES.

Deputy Surgeon-General Edward McKellar, I.M.S. (retired), at Brighton on Oct. 27th. He saw service in the Burmese war and the Indian Mutiny, and was a member of the Abyssinian Expedition. He attained the rank of deputy surgeon-general in 1877.

Temporary Surgeon A. E. F. Kynaston, R.N., of H.M.S. *Devonshire*, on Oct. 13th, at Dunskaith Hospital, from enteric fever.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8377 births and 4788 deaths were registered during the week ended Saturday, Oct. 24th. The annual rate of mortality in these towns, which had declined from 15·7 to 13·4 per 1000 in the four preceding weeks, rose in the week under notice to 13·8 per 1000 of their aggregate population, estimated at 18,120,059 persons. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·2, against a corresponding rate of 13·3 per 1000 in London. Among the several towns the death-rate last week ranged from 3·5 in Wimbledon, 4·9 in Acton, 5·9 in Ealing, 6·1 in Bournemouth, and 6·4 in Hornsey, to 17·0 in Sunderland, 17·2 in Great Yarmouth, 19·7 in Exeter, 20·0 in Huddersfield, 21·1 in Liverpool, and 22·3 in Birkenhead.

The 4788 deaths from all causes were 135 in excess of the number in the previous week, and included 540 which were referred to the principal epidemic diseases, against numbers declining from 1437 to 529 in the five preceding weeks. Of these 540 deaths, 269 resulted from infantile diarrhœal diseases, 101 from measles, 79 from diphtheria, 37 from scarlet fever, 35 from whooping-cough, and 19 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·6, against 1·5 per 1000 in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had steadily declined from 1223 to 322 in the five preceding weeks, further fell to 269, and included 76 in London, 32 in Liverpool, 17 in Birmingham, 9 in Sheffield, 8 in Manchester, and 7 in Nottingham. The deaths referred to measles, which had been 61, 73, and 67 in the three preceding weeks, rose to 101 last week, of which 22 were registered in London, 11 in Liverpool, 10 in Manchester, 9 in Leeds, 7 in Birmingham, 7 in Oldham, 6 in Birkenhead, and 6 in Newcastle-on-Tyne. The fatal cases of diphtheria, which had been 63, 57, and 59 in the three preceding weeks, further rose to 79 last week; 30 deaths occurred in London, 4 each in Stoke-on-Trent, Birmingham, and Middlesbrough, and 2 each in Tottenham, Portsmouth, Southampton, Devonport, Bristol, and Hull. The deaths attributed to scarlet fever, which had been 29, 31, and 29 in the three preceding weeks, rose to 37 last week, and included 7 in Manchester, 5 in Liverpool, 5 in Birmingham, 3 in London, 2 in Ipswich, and 2 in Preston. The deaths referred to whooping-cough, which had been 50, 47, and 38 in the three preceding weeks, further declined to 35 last week, of which 8 were recorded in London and 2 each in Plymouth, Birkenhead, St. Helens, Leeds, Sheffield, and Cardiff. The fatal cases of enteric fever, which had been 23, 17, and 14 in the three preceding weeks, rose to 19 last week, and included 3 in London, 2 in Liverpool, and 2 in Stockton-on-Tees.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 3071 to 4473 in the nine preceding weeks, had further risen to 4616 on Saturday last; 657 new cases were admitted during the week, against 640, 670, and 650 in the three preceding weeks. These hospitals also contained on Saturday last 1481 cases of diphtheria, 69 of enteric fever, 38 of whooping-cough, and 32 of measles, but not one of small-pox. The 1273 deaths from all causes in London were 68 in excess of the number in the previous week, and corresponded to an annual death-rate of 14·7 per 1000. The deaths referred to diseases of the respiratory system, which had increased from 110 to 178 in the five preceding weeks, further rose to 191 in the week under notice, and were 40 above the number registered in the corresponding week of last year.

Of the 4788 deaths from all causes in the 97 towns, 200 resulted from different forms of violence and 402 were the subject of coroners' inquests, while 1448 occurred in public institutions. The causes of 48, or 1·0 per cent. of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Leeds, Bristol, Bradford, Hull, and in 56 other smaller towns. Of the 48 uncertified causes of death, 13 were registered in Birmingham, 10 in Liverpool, and 2 each in Stoke-on-Trent, Preston, Barrow-in-Furness, Darlington, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1213 births and 659 deaths were registered during the week ended Saturday, Oct. 24th. The annual rate of mortality in these towns, which had been 15·6, 15·9, and 14·7 per 1000 in the three preceding weeks, rose to 15·0 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 14·4, against 13·2 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 1·2 in Clydebank, 7·9 in Ayr, and 11·3 in Motherwell, to 19·6 in Aberdeen, 20·6 in Kilmarnock, and 22·8 in Kirkcaldy.

The 659 deaths from all causes were 13 in excess of the number in the previous week, and included 80 which were referred to the principal epidemic diseases, against 96 and 81 in the two preceding weeks. Of these 80 deaths, 31 resulted from infantile diarrhœal diseases, 19 from diphtheria, 16 from scarlet fever, 9 from whooping-cough, 4 from enteric fever, and 1 from measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·8, against 1·6 per 1000 in the large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 52, 54, and 29 in the three preceding weeks, slightly rose to 31 last week, and included 16 in Glasgow, 5 in Motherwell, and 3 in Dundee. The deaths referred to diphtheria, which had increased from 4 to 19 in the five preceding weeks, were again 19 last week, of which 7 were registered in Aberdeen, 5 in Edinburgh, 4 in Glasgow, and 2 in Kirkcaldy. The fatal cases of scarlet fever, which had risen from 6 to 16 in the five preceding weeks, were again 16 last week, and included 8 in Glasgow and 6 in Aberdeen. The deaths attributed to whooping-cough, which had been 13, 8, and 10 in the three preceding weeks, were 9 last week, of which 7 occurred in Glasgow. The 4 deaths referred to enteric fever were slightly below the average in recent weeks, and comprised 3 in Glasgow and 1 in Falkirk. The fatal case of measles was recorded in Dundee.

The deaths referred to diseases of the respiratory system, which had increased from 62 to 89 in the five preceding weeks, were again 89 in the week under notice; 21 deaths resulted from various forms of violence, against numbers rising from 20 to 29 in the four preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 575 births and 365 deaths were registered during the week ended Saturday, Oct. 24th. The annual rate of mortality in these towns, which had been 17·3, 15·4, and 16·2 per 1000 in the three preceding weeks, declined to 15·8 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 16·9, against corresponding rates of 13·2 and 14·4 per 1000 in the English and Scotch towns respectively. The annual death-rate last week ranged from 15·3 in Dublin (against 14·7 in London and 15·1 in Glasgow), 16·9 in Belfast, 17·0 in Cork, 8·9 in Londonderry, 20·3 in Limerick, and 22·8 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 14·0 per 1000.

The 365 deaths from all causes were 10 fewer than the number in the previous week, and included 44 which were referred to the principal epidemic diseases, against 53 and 57 in the two preceding weeks. Of these 44 deaths, 21 resulted from infantile diarrhœal diseases, 9 from whooping-cough, 7 from measles, 5 from scarlet fever, and 2 from enteric fever, but not one from small-pox or from diphtheria. The mean annual death-rate from these diseases was equal to 1·9, against corresponding rates of 1·6 and 1·8 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily declined from 74 to 33 in the five preceding week, further fell to 21 last week, of which 11 were registered in Dublin and 6 in Belfast. The deaths referred to whooping-cough, which had fallen from 9 to 3 in the four preceding weeks, rose to 9 last week, and comprised 8 in Belfast and 1 in Cork. The 7 fatal cases of measles, which were all registered in Belfast, were 3 in excess of the average in the four preceding weeks. The deaths attributed to scarlet fever, which had been 2, 4, and 7 in the three preceding weeks, fell to 5 last week, of which 2 occurred in Waterford. The fatal cases of enteric fever were recorded in Belfast and Ballymena.

The deaths referred to diseases of the respiratory system, which had been 58, 56, and 71 in the three preceding weeks, fell to 60 in the week under notice. Of the 365 deaths from all causes, 126, or 35 per cent., occurred in public institutions, and 4 resulted from different forms of violence. The causes of 10, or 2·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes last week did not exceed 1·0 per cent.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Care of the Wounded at a Field Hospital.

I PROPOSE to describe from personal experience,[1] and in brief language, the manner in which the wounded are being handled in the French lines. In the first instance, during the rush of wounded that follows an action, all that can be done in a field hospital is to apply an antiseptic dressing, or adjust any first aid dressing that may have already been applied on the field of battle. The dressing for the purpose with which all our soldiers are supplied is an excellent one so long as the bandage which serves to keep it in place is not pulled too tight—which will happen, but which should of course be detected by the usual symptoms. At the ambulance hospital the ligatures necessitated by persistent hæmorrhage should be applied, and fractures set; this is done. Where wounds have been soiled by earth or by contact with filthy straw in ambulance wagons a preventive injection of antitetanic serum is the regulation treatment; it must be given at once to be of any effect. The immediate extraction of bullets and shrapnel is undertaken at the ambulance hospital in simple cases, but location of the projectile by radiography and radioscopy can only be seriously undertaken in clearing hospitals, or better still in the hospitals at the base, though the general advice is that it should be attempted at the earliest opportunity. The Service de Santé possesses a certain number of radiography plants, very well fitted up, mounted on strong automobiles and accompanied by specialists. But the development of the plates calls for a more peaceful environment than is found in hospitals within the collecting zone, and there is natural reluctance to send these costly equipages, of which the number must be limited, too near the fighting line. Already some of them have come under fire. Amputations are rarely done at the ambulance hospitals, save where there is vast destruction of the limbs by shell, with shattering of the bones and conditions that must be followed by immediate and abundant suppuration. The extensive wounds caused by shrapnel rapidly become septic. As long as only the skin and muscles are affected methodical disinfection by hydrogen peroxide solution or tincture of iodine is very valuable, and the employment of hot air, iodine vapour, combined with a current of oxygen will in more or less time lead to good cicatrisation. When there are fractures with much bone exposed the chance of saving the limb becomes very slender, and in many cases delay, with the hope of escaping amputation, is harmful to the patient, who undergoes the operation in the end after long suppuration. Gaseous gangrene, a condition which is almost unknown in civil practice, has occurred in some cases, and is an ominous complication. Prompt amputation does not always avoid a fatal issue, as the tissues have often been infected beyond the apparent limits. Injections of oxygen made into the deep parts of the tissues, according to the method of Dr. Thiriar, of Brussels, will here render signal service, but tubes of compressed oxygen are not at hand everywhere for immediate use. In default of these, injections of hydrogen peroxide can be made into the tissues beyond the infected area. General Delorme, Inspector General of the Military Medical Service, has quite properly and publicly insisted upon the value of this excellent technique. Unfortunately these injections are very painful, the solution for the sake of preservation being always acid; if it becomes alkaline it decomposes. Sodium perborate, however, allows of neutralisation without decomposition, and its use ought to be widely advocated. Wounds caused by rifle bullets, when they do not hit the cranium, the thorax, or the pelvis, and do not break any bones, are often wonderfully benign. Grooved or channelled shot wounds usually heal spontaneously within a few days if care has been taken promptly to cover up the two orifices; the bullet is, as a matter of fact, rendered aseptic by the temperature which it reaches during its flight. These wounds only become infected where a portion of the uniform is carried into the tissue by the projectile, or if the openings of the wound are contaminated by soil or the contact of dirty garments. This is now universal experience in war. Dum-dum bullets are stated to be employed by the Austrians, having been found in their cartridge pouches; too much stress, however, must not be laid upon the statement with regard to these bullets in view of the extensive damage which may be caused by an ordinary shot. The German bullet is made of compressed lead surrounded by a rather thin metallic cover, and it is not rare for this latter, when in contact with a bone, to be detached from the body of the projectile and become jagged and split up into many fragments without any explosive force or any cut-off end of the shot being required to produce such effect. The damage done is then formidable. One of these misshapen bullets can burrow a hole in a thigh large enough to take the fist; the injury is, however, only the effect of an ordinary projectile. Bullets which happen to become deformed by a ricochet, or which rebound on a stone or on a wall, afterwards act in the same fashion. Beyond these cases an ordinary bullet during its flight may at a certain point in its course rock or see-saw on its axis; its base being heavier than its apex it describes then, not a right line or a regular parallel, spiral, or helical course, but receives a motion which causes it to produce a funnel-shaped or infundibular entry to the wound. All these facts must be known before deciding upon the existence or otherwise of an explosive or a soft-nosed bullet.

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[1] Our regular Paris correspondent writes in his covering letter [illegible] follows: "Je suis encore hors de Paris, où je suis retenu par mes fonctions de médecin chef d'un hôpital à la frontière."

The late Emile Reymond.

I am unfortunately unable to mention here individually all my French *confrères* who have fallen victims to this cruel war, but I wish at least to record the recent glorious death of one of our most esteemed surgeons, Dr. Emile Reymond. Born in 1865 at Tarbes, he became interne of the hospitals in 1891. He was laureate of the Institute and member of the Faculty of Medicine and of the Assistance Publique, and held in turn the posts of chef de clinique at the Faculté, surgeon to the Hôpital de Sèvres, and later to the departmental hospital of Nanterre. At first he did much important work in gynæcology. With his master, Terrier, he then led the way in heart suture, and in 1903 the Association Française de Chirurgie commissioned him, with Terrier, to report upon the surgery of the heart and pericardium. He became first Deputy, then Senator, for the Department of the Loire. From the inception of aviation he enthusiastically devoted himself to aerial locomotion, soon taking rank among the leading pilots. At the outset of the war, in spite of his 49 years of age, he entered as a volunteer in the military flying corps, although he held the rank of médecin-major in the Medical Service. He fulfilled his duties with conscientiousness, courage, and self-sacrifice. While reconnoitring over the enemy's positions the Germans fired on his machine, and Dr. Reymond was seriously wounded. He descended between the German and French lines. He was at once picked up and removed to hospital, where he died of his wounds, not, however, before he had been able to convey the valuable information he had been sent out to seek. The Commanding-General decorated him on his death-bed.

Medical Affairs in Paris.

The meetings of the Académie de Médecine are naturally taken up with communications bearing on the surgery of war, and the diseases especially connected therewith. Recent communications made to the Academy of Sciences and the Academy of Medicine on the part of General Delorme, Inspector-General of the French Military Medical Service, by Dr. Tuffier, Dr. Capitan, Dr. Picqué, M. Walther, and Dr. Pierre Delbet, have, thanks to the press, quickly reached our medical officers in the fighting areas, and have proved very valuable. When the war is over the medical observations now accumulating will form material of the highest scientific interest. M. Walther has studied the etiology and prophylaxis of tetanus among the wounded in war, and M. Capitan wounds of the thorax induced by the German rifle ball. M. Tuffier, who was sent by the Ministry of War to the various military medical establishments, has communicated his conclusions on the surgery of war. M. Lucien Picqué has devoted attention to the preservation of the limb in cases of wounds of the soft parts and fractures of the shafts of the long bones. Professor Pierre Delbet has submitted to the Academy an apparatus that he has used for ten years for the treatment of complicated fractures of the arm, for which he claims great advantages, especially from the standpoint of conservative surgery, and which procures immediate relief from suffering. Under its use dressings are no longer painful and consolidation takes place under the best conditions, and more rapidly than with any other apparatus. Finally, the Academy has received a communication of a more peaceful character, relating to the use of the milk given by cows collected in concentration camps at Paris. The production of this herd exceeds 8000 litres a day, and is divided among 85 hospitals, mairies, and assistance bureaux. Professor Pinard finds that this milk gives universally excellent results.

Oct. 27th.

ROYAL FREE HOSPITAL: LONDON SCHOOL OF MEDICINE FOR WOMEN.—In consequence of the war it has been decided to postpone the annual dinner usually held on the second Wednesday in December.

MASTERSHIP OF THE COOMBE HOSPITAL, DUBLIN.—Dr. R. A. McLaverty has been elected Master of the Coombe Lying-in Hospital in succession to Dr. Michael J. Gibson, whose period of office ends in December. The post is much sought for, as the Coombe Hospital has in recent years gained much ground as a teaching centre.

Obituary.

ANTHONY TRAILL,

PROVOST OF TRINITY COLLEGE, DUBLIN.

Dr. Anthony Traill, Provost of Trinity College, Dublin, who died on Oct. 15th, though he never practised medicine, was, since 1869, a member of the medical profession. He was the first medical man to hold the office of Provost, and it is of interest to note that contemporaneously with his rule in Trinity College two of the four other colleges in Ireland of university rank—University College, Dublin, and University College, Cork—have also been ruled by medical men. Anthony Traill was born in co. Antrim in 1838. He entered Trinity College in 1855, graduated with high honours in 1860, and became a Fellow of the College in 1865. He devoted himself thereafter to making himself familiar with the sources of study in the professional schools of the College, and took in succession degrees in law and medicine. For many years he had a close association with the School of Engineering, and was himself a pioneer in the department of electrical engineering; he had an active share, with Lord Kelvin and others, in the construction of the Portrush and Giant's Causeway electric railway, the first of its kind in the world. In 1904 he was appointed Provost. He came to rule over his College at a critical period, and it is in large part due to his firmness and courage that the College emerged unscathed and strengthened from the melting-pot of Irish university institutions. He gave cordial assistance to the Government in its fruitful endeavours to solve the problem of Irish university education. During his provostship several notable reforms took place in Trinity College, of which perhaps the admission of women on equal terms with men was of the greatest public interest. In the progress of the medical school Traill took an active interest, and he entered with zest into the arrangements for the bicentenary celebrations in 1912. Soon after his elevation to the provostship he was elected an Honorary Fellow of the Royal College of Physicians of Ireland and of the Royal College of Surgeons in Ireland. He held honorary doctorates from the Universities of Glasgow, Aberdeen, and St. Andrews.

A man of affairs rather than a scholar, Dr. Traill had great administrative ability and indomitable energy. Without much grace of manner he had solid qualities of head and heart. He had no distaste for controversy, but he was singularly free from personal bitterness. Neither friend nor opponent ever doubted his absolute honesty and straightforwardness. Greater scholars than Traill have guided the fortunes of Trinity College in the past; none has served her with more single-minded and untiring devotion; few have rendered her more solid service.

A well-known Belfast physician sends us the following more intimate notes upon the career of Dr. Traill: "Traill was a typical Ulsterman, while since the foundation of Trinity College, Dublin, by Queen Elizabeth in 1592, although he was the forty-fifth Provost, he was only the fourth layman to occupy this position and the first and only graduate in medicine to be so honoured. He was a very strong personality. He had a splendid academic standing, he held every position of importance at Trinity College, was a graduate in arts, law, and medicine, and when he gained the coveted fellowship he presented himself for examination in mathematics, experimental science, Hebrew, and philosophy. He was also a very favourite tutor, and during his years as tutor Fellow he had over 900 pupils. As an athlete he was in his time captain of the University cricket eleven; he was one of the founders of the college races in 1857; on 14 different occasions he was racquet champion of his University, holding this cherished position when he was actually 51 years of age; for many years he shot at Wimbledon with the Irish eight; and in more recent times he was an enthusiastic golfer, his handicap when he was 65 years of age being only five. Further, he was a good shot, an excellent fisherman and mountain climber, and a member for many years of the Alpine Club. Then he was an excellent man of business, and Trinity College owes much to his splendid work in ably re-arranging her finances. But, above all else, Dr. Traill was a born fighter on behalf of any cause or person he supported, and one of the very best of friends. Under a pugnacious exterior there beat the kindest and truest of hearts."

LIBRARY OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—The annual report recently issued by the librarian of the Royal College of Physicians states that changes have recently been made in the structure of the College which will tend to the greater comfort of readers. One of the committee rooms has been enlarged and the books formerly stored in it have been moved to a new gallery in the library. The entire sum available each year for purchases is only £110, of which £92 are spent on the purchase and binding of journals. It is obvious that the remainder is inadequate to keep up a modern supply of books, and the library committee appeals to Fellows to assist the College by gifts of books. The librarian is endeavouring to make as complete as possible the collection of medical works by Irish writers and of medical works published in Ireland.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At a meeting of the College held last week Mr. J. W. B. Hodsdon was elected President of the College for the ensuing year. Mr. Hodsdon has been a member of the Council and the representative of the College on the General Medical Council for a number of years. At the same meeting the following gentlemen, having passed the requisite examinations between July 6th and 11th, were admitted Fellows: Thomas Stevens Allen, M.R.C.S. Eng., L.R.C.P. Lond., London; Arthur James Ballantine, M.B., Ch.B. Edin., Cape Town; Norman Hay Bolton, M.B. Ch.B. Edin., Nottingham; Henry Harvard Davis, M.R.C.S. Eng., L.R.C.P. Lond., Glamorgan; Henry Ernest King Fretz, L.R.C.S. Edin. (triple qual.), London; William Gordon Goudie, M.B., Ch.B. Glasg., Glasgow; David Livingstone Graham, M.B., Ch.B. Glasg., Captain Indian Medical Service; John Donald Gunn, M.B., Ch.B. Edin., Edinburgh; Douglas James Guthrie, M.D. Edin., Edinburgh; Arthur Joseph Gordon Hunter, M.D. Edin., Linlithgow; John Brown Dalzell Hunter, M.B., Ch.B., Glasg., Captain Indian Medical Service; Frederic George Lloyd, M.R.C.S. Eng., L.R.C.P. Lond., London; Richard Mainwaring Mainwaring-White, M.D. Edin., Cheshire; Francis Leslie Nash-Wortham, M.R.C.S. Eng., L.R.C.P. Lond., Edinburgh; John William Pell, L.R.C.S. Edin. (triple qual.), Hupeh, Central China; Garfield Arthur Platt, L.R.C.S. Edin. (triple qual.), &c., Ontario, Canada; Edmund Lewis Reid, M.B., Ch.B. Aberd., Banffshire; James Wilson Richardson, M.R.C.S. Eng., L.R.C.P. Lond., &c., Calgary, Alberta, Canada; Sydney James Simpson, M.B., Ch.B. New Zealand, Essex; Leslie Joseph Thompson, M.B., Ch.B. New Zealand, Feilding, New Zealand; Denis Byrne Walshe, M.B., B.S. Melb., Thames, New Zealand; Russell Ernest Walker, M.B., Ch.B. Edin., Peterborough; and Walter Quarry Wood, M.B., Ch.B. Edin., Edinburgh.

Correspondence.

"Audi alteram partem."

SIR JAMES Y. SIMPSON AND ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—In his delightful Harveian Oration Sir R. Douglas Powell attributes the discovery of anæsthesia to Sir James Y. Simpson. By a curious coincidence, on the very day on which I heard the address I received from Sir Alexander Simpson the proof sheets of a letter written in April, 1870, to Dr. Bigelow, of Boston, in which Sir James Simpson repudiates anything so "wild or extravagant" as that he used chloroform as an anæsthetic before ether. Thirteen months had elapsed; and later in the letter, discussing the rival claims of Jackson, Wells, and Morton, he decides in favour of Morton, saying that he was "the gentleman to whom I believe the profession and mankind are really and truly indebted for first reducing into practice the production of insensibility by ether inhalation, with the object of annihilating pain in surgical operations." The splendid work which Sir James Simpson did in those early days can never be forgotten, but it is unjust to his memory to attribute to him, as is so often done in this country, a discovery which had become "the blessed possession of the whole world" (to use a phrase of Professor Welch) before the introduction of chloroform.

I am, Sir, yours faithfully,

Oxford, Oct. 26th, 1914. WILLIAM OSLER.

WANTED, A DIAGNOSIS.

To the Editor of THE LANCET.

SIR,—Dr. Norman Butler's two cases, observed with care and reported in THE LANCET of Oct. 24th, are so lucidly described as to make their diagnosis for the neurologist a matter of comparative simplicity. They belong to a group of acute toxi-infective diseases of the nervous system in which are distinguished four main subdivisions—acute ascending meningomyelitis, acute toxic polyneuritis, acute poliomyelitis or polioencephalomyelitis, and Landry's paralysis.

The first of these is excluded mainly by the absence of any sensory changes and the absence of any sphincter impairment of any duration. The second is excluded partly for a similar reason—viz., the absence of sensory symptoms or signs such as are constant in multiple neuritis, though it is true Dr. Butler's second case had transient pains. The third class, acute poliomyelitis, is more difficult to exclude, for there is an ascending type the symptoms of which are not unlike those of Dr. Butler's cases. Even in the ascending cases, however, the affection is not, as a rule, as symmetrical as it appears to have been in his, and, further, the excellence of the recovery in them is far from common in universal poliomyelitis.

Dr. Butler's cases come most readily under the category of Landry's paralysis, acute ascending motor paralysis of central origin. It is true that in various recent epidemics of poliomyelitis ascending cases have been described as of the Landry type, and some have gone so far as to deny any clinical or pathological entity to Landry's paralysis. But the present state of our knowledge does not justify this generalisation, while it must not be forgotten that Farquhar Buzzard and others have recorded cases of this acute ascending motor paralysis in which the infective agent was not the virus of poliomyelitis. There are, besides, certain minor points in the type of motor palsy which are met with in Landry's paralysis and not in poliomyelitis.

As to the morbid agent in Dr. Butler's cases, it is unwise to hazard any suggestion. Whether it was toxic or infective must remain obscure, although examination of the cerebro-spinal fluid might have proved of considerable value. In any case the condition was probably one of infection of the ascending lymph streams through the spinal cord and lower brain stem, involving almost exclusively the ventral cornua of grey matter. The explanation of this specific action is still unknown; but in certain cases the syphilitic virus has been found to invade the ventral horns exclusively in a similar fashion—so-called syphilitic poliomyelitis. A case of this sort, in which the pathological findings corroborated the clinical view taken of the case, was published by Professor Léri, of Paris, and myself in the *Nouvelle Iconographie de la Salpêtrière* (1904).

Dr. Norman Butler is to be congratulated on the precision with which he has worked out these two interesting cases, which are of undoubted documentary value.—I am, Sir, yours faithfully,

S. A. KINNIER WILSON.

Harley-street, W., Oct. 24th, 1914.

SHELL WOUNDS IN MODERN NAVAL WARFARE.

To the Editor of THE LANCET.

SIR,—In the article with the above title which I jointly contributed to your issue of last week a mistake has crept in which I should be grateful if you would correct. The vaccine was not made by Messrs. Parke, Davis, and Co., but was prepared in the inoculation department of St. Mary's Hospital and under the supervision of Sir Almroth Wright, who has generously sent a stock for Admiralty use through the Medical Director-General.

I am, Sir, yours faithfully,

BRYAN PICK,

Shotley, Oct. 26th, 1914. Staff-Surgeon, R.N.

THE NATIONAL MEDICAL UNION AND THE £90,000 WINDFALL TO PANEL DOCTORS.

To the Editor of THE LANCET.

SIR,—In the interest of the general public and the medical profession the council of the National Medical Union has deemed it expedient to lodge with the Insurance Commissioners a protest against the allotment of their £90,000 medical benefit surplus. This surplus has accrued because nearly a quarter of a million insured persons would not elect a panel doctor to attend them during illness, and because the authorities entrusted with the fulfilment of the National Health Insurance Act did not distribute those insured persons severally amongst the panel doctors, and did thus disregard Section 15 (2) (*d*) of the Act, which provides for such system as will secure "the distribution amongst, and, so far as practicable, under arrangements made by, the several practitioners whose names are on the lists, of the insured persons who after due notice have failed to make any selection, or who have been refused by the practitioner whom they have selected."

Moreover, according to Section 14 (1) of the Act, it is provided that medical benefit shall be in all cases administered by and through the Insurance Committees and not by the Commissioners.

I am, Sir, yours faithfully,
VIVIAN T. GREENYER,
Oct. 21st, 1914. Chairman of Council of National Medical Union.

DIEPPE AS A MILITARY HOSPITAL BASE.

To the Editor of THE LANCET.

SIR,—In your issue of Oct. 3rd there is an article under the above heading to which the Baroness Delaborde-Noguez has just called my attention. She wishes me to say that all the wards at the Casino are thoroughly warmed by stoves, and this I can testify to myself. It is a pity that Dr. Knowsley Sibley was led into the error of supposing it would not be so. Further, a regular staff of nurses are on duty at night at the Casino, and at the College the nuns attend to the wards at night. My work for some weeks past has been at the College, so I can speak from experience. There are now a number of duly qualified nurses at the Dieppe hospitals, and the doctors here greatly appreciate the excellent service they render.

During the time I have been here no wounded have arrived during the night. For the last week we have had none at all, and at least half the beds for wounded have been unoccupied.

I shall esteem it a favour if you will allow me space for this letter. I can quite understand how difficult it must be for anyone paying only a flying visit to this town of hospitals—there are 16 in Dieppe itself—to avoid occasional inaccuracies.

I am, Sir, yours faithfully,
ELIZABETH LE BLOND.
Hotel Chariot d'Or, Dieppe, Oct. 22nd, 1914.

IMPERFECTIONS IN THE CUMBERLAND INFIRMARY.

To the Editor of THE LANCET.

SIR,—Sir Henry Burdett is correct in stating that on the cover of the report of the Cumberland Infirmary for 1913 there may be found a slip of paper which declares "there is accommodation for 150 in-patients," but owing to lack of funds only 102 beds are authorised for occupation. It is not, therefore, incorrect to describe our hospital as a small provincial institution. We could not put up more than 130 patients at most (unless on balconies or open-air spaces), even if our finances permitted. Thirty beds in the disused portion of the infirmary have recently been inspected by the War Office, but only 20 have been considered fit for occupation by wounded or sick.

Sir Henry Burdett tells us that his report on our infirmary is intended to be republished, with some hundred others, as a faithful record of the condition in which he found it in June, 1914. His visit lasted at most two hours, and I cannot regard his report as in any sense a faithful record. In the visitors' book of the infirmary over his signature I find the following:—

> It has been a pleasure to inspect this hospital after 21 years. Since 1892 much has been done to improve the hospital and to add to its efficiency. The working and planning of the new portions of the hospital would be greatly aided if the ward units were made complete by the addition of a suitable airy temporary larder to each ward where the food can be kept, by the provision of a housemaid's cupboard, of patients' clothes cupboards, and other details which are now included in modern hospital construction. The accommodation for the nurses is attractive and good. That for the domestic staff a great improvement on what formerly prevailed, but I should like to see one good room comfortably furnished as a sitting-room for the members of this staff.

When Sir Henry Burdett's faithful record appears will he include this impression? Or will he republish the following remarks from *The Hospital*:—

> Administratively, however, it seemed to us that it has been changed sadly for the worse. .... It was a sad disappointment to find an absence of the old spirit and atmosphere of 20 years before. ...... We are convinced something is radically wrong at this institution.

Satisfied as Sir Henry Burdett appears to have been after his inspection of the Cumberland Infirmary in June, 1914, some unexplained change came over him.

Sir Henry Burdett has condemned our mortuary as having been "erected on a defective plan," and says that every properly organised voluntary hospital has a mortuary chapel or view room, so that "reverence for the dead and due consideration for the living may always be secured." The mortuary in the Cumberland Infirmary was built in 1903, together with a post-mortem room, at a cost of £500, and stands by itself at some distance from any ward. The mortuary or "view room" resembles a small chapel, having an open-timbered roof, a red-tiled floor, with leaded and coloured glass windows at each end. In it four low beds, supplied with fine hemstitched linen, can be found and a little altar table upon which rest a brass cross and vases for flowers placed beneath one window and a "prie Dieu" below the other window. In this "view room" I maintain that all due "reverence for the dead and due consideration for the living" can be secured.

It seems that Sir Henry Burdett cannot understand that in our one clinical room we have all that we require at present and our existing medical staff could not conveniently utilise more than one such room. It may be pointed out to Sir Henry Burdett that if our finances were in a prosperous state we should like to provide an X ray room of three times the size of the one we now have, and that we have no room set apart for the honorary dental surgeon. These and other defects could be remedied, not so much by the possession of the "old spirit and atmosphere" (as Sir Henry Burdett might think) as by the acquisition of increased funds.

I am, Sir, yours faithfully,
Carlisle, Oct. 26th, 1914. H. A. LEDIARD.

⁎⁎ This correspondence must now cease.—ED. L.

THE WAR.

THE ARMY SANITARY COMMITTEE.

The constitution of the Army Sanitary Committee is as follows:—

Brigadier-General F. J. Anderson, R.E.

Arthur Newsholme, M.D., C.B. (Medical Officer, Local Government Board).

Colonel W. H. Horrocks, M.B., B.Sc. (Expert in Sanitation, Army Medical Advisory Board).

Sir Frederick Treves, Bart., G.C.V.O., C.B.

John Robertson, M.D., B.Sc. (Medical Officer of Health, Birmingham).

Henry R. Kenwood, M.B., F.R.S.E. (Civil Expert in Sanitation, Army Medical Advisory Board).

Major C. E. P. Fowler, F.R.C.S., Royal Army Medical Corps (late Officer in Charge, School of Army Sanitation, Aldershot).

General Anderson is the chairman and Mr. Edmond T. Gann will act as secretary.

MENTIONED IN DESPATCHES.

The names of officers in the Royal Army Medical Corps who have been mentioned in Sir John French's despatches under the designation of "General Headquarters Staff, &c.," are given below. From the details supplied in the *Gazette* it was only possible to compile last week a complete list of regimental medical officers and of those specifically grouped together in the list as officers in the Royal Army Medical Corps.

Surgeon-General T. P. Woodhouse, Colonel E. H. L. Lynden-Bell, Colonel T. J. O'Donnell, D.S.O., Colonel H. S. Hickson, Colonel R. Porter, Colonel R. H. S. Sawyer, Brevet-Colonel F. Smith, D.S.O., Lieutenant-Colonel G. H. Barefoot, Lieutenant-Colonel W. W. O. Beveridge, D.S.O., Lieutenant-Colonel F. S. Clark, Lieutenant-Colonel G. Cree, Lieutenant-Colonel C. Dalton (killed), Lieutenant-Colonel J. J. Russell, Major M. H. Babington, Major E. A. Bourke, Major B. B. Burke, Major A. Chopping, Major S. L. Cummings, Major M. H. G. Fell, Major J. V. Forrest, Major J. S. Gallie, Major J. G. MacNaught, Major G. A. Moore, Major C. D. Myles, Major E. Ryan, Major E. B. Steel, Major F. A. Symonds, Major A. H. Waring, Major A. L. A. Webb, Major A. B. Smallman, Captain A. C. Amy, and Captain A. L. Otway.

THE CASUALTY LIST.

THE following names of officers in the Royal Army Medical Corps have appeared in casualty lists since our last issue:—

Wounded: Captain R. E. Porter and Lieutenant H. de C. Dillon.

Missing: Captain B. Johnson and Lieutenant J. L. Jackson.

Captain G. H. Rees, previously reported missing, is now unofficially reported a prisoner of war. Captain D. M. Corbett is unofficially reported a prisoner of war. Cards have been received from Captain S. Field and Lieutenant J. E. Hepper stating that they are prisoners of war at Torgau and are well.

The Secretary of the Admiralty announces that information has been received that Staff Surgeon Louis L. Greig, R.N., of the Royal Naval Division, is a prisoner of war in Germany.

During the operations in Nigeria and the German Cameroons Dr. W. A. Trumper and Dr. J. Lindsay, of the West African Medical Staff, are officially stated to have been captured while attending to the wounded, and Dr. W. S. Clark, also of the West African Medical Staff, was captured at a later date while attending to the wounded, but has since been released.

THE WAR AND THE DRUG SUPPLY.

During the past few weeks the drug market has recovered somewhat from the depression which set in when the war began. Since the note on this subject appeared in THE LANCET of Sept. 19th the medicinal products which have declined in value have exceeded in number those which have advanced, and this is a remarkable fact in view of the existing conditions. Of course, prices on the whole are still greatly above the normal, but it is very satisfactory to know that the advancing tendency which affected so many drugs has been checked. The reasons for this are several. Quite substantial shipments of many of these drugs, of which new supplies were hardly expected, have been arriving at British ports, from which it may be inferred that neutral countries were fairly well supplied with synthetic products and fine chemicals. Then again there is strong evidence that medical practitioners, adopting the suggestion of the Home Office and insurance authorities, have been prescribing whenever practicable and without prejudice to their patients suitable substitutes for German drugs. Thus the consumption of these drugs has been below the normal, while fresh supplies have not been entirely stopped. There are, however, some products which have continued to advance in price. Notable among these are atropine, the extremely high value of which is due to the scarcity of belladonna root; carbolic acid, which is three times its normal price owing to the very heavy demand for this substance, which is required, not only for disinfecting purposes, but for the manufacture of explosives; and corrosive sublimate and other salts of mercury, which have advanced in sympathy with quicksilver. There are some few products, of which menthol is a notable example, which are even lower in price than at normal times, for the reason that supplies which would ordinarily have gone to Germany have been diverted to English ports. Another remarkable feature of the drug market is the comparatively low value of Norwegian cod-liver oil, which in spite of the situation in the North Sea is not substantially higher than that quoted before the war. Opium and its alkaloids, morphine and codeine, are also obtainable at comparatively low figures considering the very heavy demand for them occasioned by the treatment of so many wounded soldiers. The prices are naturally much above the normal in consequence of the disorganisation of the market for Turkish opium, but had it not been for the large supplies of Persian opium that have arrived in London prices would have been excessive.

JOINT RED CROSS COMMITTEE.

On the recommendation of the Duke of Connaught, Grand Prior of the Order, the King, as Sovereign Head, and the Queen, as President of the Ladies' Committee, of the Order of St. John of Jerusalem in England, and Queen Alexandra, as President of the British Red Cross Society, have expressed their approval of the immediate formation of a joint committee of the two organisations, which shall sit throughout the war, to secure coördination and united action in work which is common to both bodies. The committee has been constituted as follows, and communications should be addressed to Room 70, 83 Pall Mall, S.W. :—

Appointed by the Order of St. John of Jerusalem.—Adeline Duchess of Bedford, Lady Perrott, Colonel Sir Herbert Jekyll, K C.M.G. (Chancellor), Colonel Sir Herbert Perrott, Bart. (Secretary-General), the Earl of Plymouth, Lieutenant-Colonel Sir Richard Carnac Temple, Bart., Sir John Hewett, G.C.S.I., and the Right Hon. Sir Claude Macdonald, G.C.M.G.

Appointed by the British Red Cross Society.—The Marchioness of Lansdowne, Georgina Countess of Dudley, Sir William Edmund Garstin, G.C.M.G., Sir Robert Arundel Hudson (chairman of Finance Committee), Sir Walter Roper Lawrence, G.C.I.E., Mr. Edward A. Ridsdale, the Hon. Arthur L. Stanley, M.V.O., M.P. (chairman of the Executive Committee), and Sir Frederick Treves, Bart., G.C.V.O.

NEW WAR OFFICE APPOINTMENT.

Colonel Michael W. H. Russell, R.A.M.C., has been appointed Deputy Director-General of the Army Medical Service, and to be temporary surgeon-general, in succession to Surgeon-General W. G. Macpherson, A.M.S., C.M.G., K.H.P.

THE CONTINENTAL MEDICAL PRESS AND THE WAR.

Nothing is more suggestive of the intense preoccupation of France in the struggle for national survival in which she is engaged than the state in which the *Presse Médicale* now appears. The first number to betray the changed state of affairs was published on August 12th. It begins with a paragraph explaining that owing to the early mobilisation of its editorial secretaries, and also to the events now filling the mind of every Frenchman, certain changes have been necessary. In a most stirring article M. Helme outlines the policy of the journal as one of assistance to those who are not at the front and yet wish with their whole heart to serve their country. For the consolation of such he quotes with approval the words of a surgeon just dead to the effect that "every battlefield is good to the man who desires to do his duty." All the articles and paragraphs in this and subsequent numbers deal exclusively with the war. There are several admirable lectures by Edmond Delorme, Medical Inspector-General of the French Army, and others on military surgery. Other paragraphs deal with the organisation of civil practice, of relief work, and so on. There are also directions for the execution of anti-typhoid vaccination. Details of Red Cross arrangements are given, and a very interesting column is devoted to replies to correspondents. An article from the *New York Herald* is quoted at length in which the allegations of the Germans with regard to dum-dum bullets are dealt with, the conclusion arrived at being that it is impossible to deduce from the mere appearances of wounds that such bullets have been used, and that in fact nothing but the discovery of unused dum-dum bullets can be held to prove the charge that has been advanced against the Allies. In this connexion may be quoted the opinion said to have been expressed by a German surgeon since the outbreak of war, and reproduced from one of the German journals in an American medical weekly, to the effect that the rifle bullet of the French army inflicts a clean and relatively humane wound. It is impossible to read the *Presse Médicale* without a sense of admiration for the passion with which the French nation has undertaken the task thrust upon it by the unscrupulous ambitions of the enemy. The German medical weeklies are still appearing. From these we learn that the health of the army is regarded as satisfactory, and that the medical organisation is thought to be equal to the heavy strain which is already being thrown upon it. The papers are reduced in bulk, and deal largely but not exclusively with military subjects. One reference to a British journal, the *Western Medical News*, published in Saskatchewan, may be permitted. Like the French journal alluded to, this is largely given up to war items. The editorial notes quote the words with which Professor Depage, of Brussels, opened the Fourth International Surgical Congress, to the effect that "it is the privilege of little Belgium to offer a meeting-place to the learned men of all nationalities, covered by Europe herself with the shield of peace and liberty." When these words were spoken few thought that within a few weeks one of the guarantors of that peace and liberty would be devoting all her energies to a ruthless campaign of violence and tyranny in the very land she had solemnly undertaken to protect.

OBITUARY OF THE WAR.

GEORGE CHARLES CUMBERLAND ROSS, M.B., B.CH. T.C.D.,

STAFF SURGEON, ROYAL NAVY.

Dublin students of the "nineties" will have learned with great regret that Staff Surgeon George C. Ross, R.N., is supposed to have lost his life in the disaster to H.M.S. *Hawke* on Oct. 15th in the North Sea. Ross was a student of Trinity College and the Richmond Hospital, and became qualified in 1899, graduating M.B., B.Ch., and B.A.O. of the University. He had obtained his B.A. degree two years previously. During his college career he nearly lost his life by a sailing accident in Dublin Bay. He was the eldest son of Surgeon-Colonel George Cumberland Ross, late I.M.S., with whom much sympathy is felt. He entered the navy as surgeon in 1901 and was promoted to be staff surgeon in February, 1909. He joined the *Hawke* on August 1st last, and there seems to be now no hope that he and his two medical colleagues, Surgeon G. W. M. Custance and Temporary Surgeon J. H. D. Watson, have survived.

WILLIAM ORMSBY WYNDHAM BALL, M.B., CH.B. T.C.D.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant W. O. W. Ball, who was killed on Sept. 26th during the battle of the Aisne, was born on Sept. 27th, 1889, at Palmerston Park, Dublin. He was the younger son of the late Henry Wyndham Ball. From St. Andrew's College, Dublin, he proceeded in 1907 to the University of Dublin, graduating B.A. in 1910 and M.B., Ch.B., B.A.O. in 1912. He had a distinguished career as a student in the School of Physic of Trinity College, and acted as resident pupil at Sir Patrick Dun's Hospital during his final year. In 1912 he obtained the L.M. diploma of the Rotunda Hospital. He was one of the first members of the medical unit of the Dublin University Officers Training Corps, which was established four years ago, and which has sent so many University men to the front in the present crisis. Lieutenant Ball entered the Royal Army Medical Corps in January, 1913, and before the outbreak of war was stationed at Longmoor. He was killed on the eve of his twenty-fifth birthday while in the act of tending a wounded soldier. During the great retreat from Mons towards Paris he had already had several narrow escapes. Once whilst he was dismounted and dressing a wounded man his horse was shot; on another day a bullet passed through his water-bottle; while on a third occasion, when in charge of a stretcher party, a shell burst not 20 yards away on the spot where he had been standing a minute before. He was also hit by a spent bullet and several times by fragments of shells, but was uninjured. Whilst a student at Trinity College Ball was a noted hockey player and played for Ireland in six international matches during 1909 and 1910.

JOHN CROCKET, M.D., CH.B. EDIN.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant John Crocket, who was killed in action with the Expeditionary Force at the age of 28, was the only son of Mr. William Crocket, of Balmaghie, Headmaster of Sciennes School, Edinburgh, and a nephew of the well-known Scottish novelist. He was educated at Watson's College, Edinburgh, and graduated M.B., Ch.B., at the University of Edinburgh in 1908. After graduation he acted as resident house surgeon at the Edinburgh Royal Infirmary, resident medical officer at Chalmer's Hospital, and house surgeon at the Royal Hospital for Sick Children, Edinburgh. He obtained his M.D. degree this year, the title of his successful graduation thesis being "The Noguchi Luetin Reaction." He received his commission as Lieutenant in the Royal Army Medical Corps in January, 1913, and was recently stationed at Edinburgh before leaving for the front. Lieutenant Crocket was a man of considerable force of character and individuality. During his student days he took a leading part in the affairs of the Edinburgh University and Dumfries and Galloway Society, and he was an enthusiastic golfer and lawn-tennis player.

THE BRITISH RED CROSS SOCIETY.—The summary of work for the week ending Oct. 28th, shows that the number of hospitals accepted by the War Office to date is 247, containing beds for 8077, including 1597 beds accepted during the past week, and distributed among the Army Commands as follows:—London, 606; Eastern, 2678; Irish, 189; Southern, 1834; Northern, 1270; Aldershot, 609; and Western, 891. A number of Red Cross Voluntary Aid Detachments are being utilised in connexion with these hospitals.

Sir Robert Borwick having generously promised £2000 a year, to be paid quarterly during the war, for the maintenance of sick and wounded Colonial officers in nursing homes, arrangements have been completed with the nursing homes of Miss Lancaster, 29, Wimpole-street, W., and Miss Pollock, 50, Weymouth-street, W., for the reception and treatment of Colonial officers. The surgical and medical staffs have now been completed, and the following is a roll of the names of those who have generously given their services in connexion with the above nursing homes:—Mr. Charters Symonds, Mr. C. A. Ballance, Sir Seymour Sharkey, Dr. H. P. Hawkins, Mr. Harold Gardiner, Mr. J. F. Jennings, and Dr. J. Brunton Blaikie; Dr. F. E. Shipway, Dr. Z. Mennell, and Dr. Arthur Bevan are the anæsthetists; Mr. A. D. Reid the radiographer; and Mr. J. Dudley Benjafield the bacteriologist.

The British Red Cross Hospital at Netley is gradually getting into working order as the contractors complete the huts. 100 beds are now available for patients, and a certain number of sick and wounded were admitted on Oct. 26th.

CHADWICK PUBLIC LECTURES: WAR PROGRAMME.—The trustees of the Chadwick Public Lectures announce the following programme for the coming three months. On Saturdays, Nov. 14th, 21st, and 28th, at 3 P.M., Dr. A. T. Nankivell will lecture at Bedford College, Regent's Park, on Camp, Ship, and Hospital Hygiene. On Fridays, Dec. 4th and 11th, at 8.15 P.M., Sir Ronald Ross, K.C.B., will lecture at the London School of Economics, Clare Market, Kingsway, on Government and Military Sanitation in the Tropics. On Fridays, Jan. 15th, 22nd, and 29th, 1915, at 5.15 P.M., Dr. F. M. Sandwith, Gresham professor of physic, will lecture at the Royal Society of Arts, John-street, Adelphi, on War and Disease. Admission will be free to all the lectures. With the sanction of the Medical Director-General of the Navy and by arrangement with the Surgeons-General of the respective ports a course of three Chadwick lectures on Naval Hygiene—(1) the Progress of Naval Hygiene and its Effects on the Health of the Navy; (2) the Health of the Ship; and (3) the Health of the Sailor—will be given by Professor W. J. Simpson, C.M.G., M.D., in the Mayor's Room, Town Hall, Portsmouth, on Fridays, Nov. 27th and Dec. 4th and 11th, at 9 P.M., and in the R.N. Hospital, Plymouth, on Saturdays, Nov. 28th and Dec. 5th and 12th. Further particulars of these and other Chadwick lectures may be obtained from the secretary at the offices of the Chadwick Trust, 8, Dartmouth-street, Westminster.

THE HISTORICAL MEDICAL MUSEUM: A WAR EXHIBIT.—A special exhibit of interesting objects and relics associated with naval and military surgery, nursing, and ambulance is being arranged at the Wellcome Historical Medical Museum in Wigmore-street. It will include miniatures, portraits, prints, autograph letters, commissions, and relics of famous naval and military surgeons, surgical instruments and appliances used in naval and military surgery in bygone times, also medical and surgical chests, cases and cabinets, &c., used in war time. Pictures, prints, and drawings of field ambulance work, military hospitals, appliances, and equipments will also be included. The curator would be glad to hear from medical practitioners who may be willing to lend relics, instruments, or objects of a similar character. Any objects lent will be treated with the greatest care and insured against loss or damage. Particulars and descriptions of loans should be sent as early as possible, addressed to the Curator, the Wellcome Historical Medical Museum, 54A, Wigmore-street, London, W.

THE WORK OF THE VOLUNTARY AID DETACHMENTS IN KENT.—A correspondent writes: "The organisation of the V.A. Detachments in Kent has been put to the test and stood the strain very well. On Oct. 14th at midnight, for example, certain detachments were warned that 4000 Belgian wounded had been landed at Folkestone. The following relates to the work at a certain small town in Kent where 50 cases were sent to a large empty country house. The wounded arrived at 10 A.M., notice of their arrival being given only half an hour in advance. Order for 'mobilisation' had been received at midnight; the house was then quite empty, but clean. By 9 A.M. all beds were ready and equipment assembled for clothing, feeding, and dressing wounds. The resident medical officer had been fetched by car from an adjacent county and was on duty at 6 A.M. The nurses, cooks, and male orderlies were in attendance, and the conveyance of wounded from the station was carried out by one ambulance for three stretcher cases and a number of cars. A receiving tent had been pitched, equipped with a bath, and by noon the weary, exhausted men were all in bed, washed and fed, and all wounds were dressed by 8 P.M. The wounded had been mostly cleared from base hospitals in Ostend, Ghent, and Antwerp, and none of them had been attended for three or four days. The injuries comprised several severe perforating rifle wounds of the elbow joint, and various compound fractures of the lower arm and of the carpus and metacarpus. There was a case of rifle wound perforating the base of the skull from a point anterior to the left pinna to a point on the opposite side of the nose; this injury had produced severe pain in the branches of the third nerve and acute delirium, probably the result of pain, exhaustion, and mental distress, as there were no signs of meningitis. A number of minor wounds and cases of subacute rheumatism brought the total to 54. One severe case of tetanus manifested itself within 24 hours in a very bad septic wound of the elbow-joint. Intravenous injection of antitetanus serum was at once made, followed by large rectal injections of a mixture of normal saline and sulphate of magnesia, but the case was very acute and terminated fatally within two days. Considering that the handling of such a large body of patients was performed by amateurs under the lead of one trained nurse the organisation deserves great credit. And I learn that the same success has been made in the other detachments of the county."

Transport of the Wounded.—In three days, Oct. 24th to 26th, a number of hospital ships arrived at Southampton. They brought about 2000 invalid and wounded troops, who were sent to hospitals in various parts of the country. Among the wounded were a number of Belgians and Germans. Thoughtful provision is shown to the wounded by the distribution, as the trains are leaving the Southampton Docks for the various hospital centres, of cigarettes, tobacco and pipes, and bars of chocolate, a kindness which is very much appreciated.

Wounded Soldiers in Ireland.—On Monday last the Bibby liner *Oxfordshire*, fitted as a hospital ship, reached Queenstown from Boulogne, carrying some 26 wounded officers and 700 wounded non-commissioned officers and men. They belonged to some 21 different regiments, including the Connaught Rangers, the Leinsters, the Royal Irish, the Munsters, and the Inniskillings. Of the patients 326 were sent to Dublin, 16 to Youghal, 20 to Waterford, 10 to Buttevant, 50 to Limerick, 25 to Fermoy, and 250 to Cork. Special ambulance trains ran to Cork and Dublin.

The Forth Naval Hospital. — A fully equipped emergency naval hospital was offered soon after the outbreak of war by an anonymous donor and has been accepted by Queen Mary and Princess Christian. The site selected for the building is in close proximity to the Royal Naval Hospital at South Queensferry, and within the remarkably short period of some eight weeks the extensive range of wood and corrugated iron buildings was completed. The building comprises a large central administrative block of eight rooms for the accommodation of the surgical and medical staff. From the centre of each side and from three of the angles of this central building radiate the wards, messroom, kitchen, and operating theatre. The operating theatre has been constructed according to the latest requirements, and attached to it are a dispensary, anæsthetist's room, sterilising room, and a dark room for X ray work. There are four wards. The hospital building also comprise a detached commodious set of apartments for the accommodation of the staff, an electric light installation, and an ambulance shed.

Royal Medical Benevolent Fund and the War.—In consequence of the war the College Council Club of the Royal College of Surgeons decided not to hold their usual dinner this quarter, but instead a cheque of 30 guineas has been contributed to the Royal Medical Benevolent Fund, an example which should be largely followed by those who had intended to hold dinners and festivals of the kind. The medical profession will certainly be hit hard by the war in many ways, and already special demands upon the fund are being made, of which the following is a specimen. A young doctor, only seven years in practice and recently married, having volunteered for the war, was killed in the field within the first week, leaving a widow and two children in great temporary distress. This is but an example of many distressing cases, and the fund will find it difficult to deal with them as liberally as it would desire without special help and generous support.

The Second Southern General Hospital.—A correspondent writes:—"Ever since the first batch of wounded from the battlefields of Mons, Cambrai, and so on, were admitted to this hospital early in September the staff have been kept busy. At the present time there are about 600 patients, or more if the convalescent branch at Bishop's Knoll be included. The largest class is composed of wounded and sick from the Expeditionary Force. The results of treatment have been gratifying on the whole, and so far no patient has died from wounds in the hospital. Practically the only mortality, indeed, has been due to pneumonia occurring among the recruits. There are 200 Belgian soldiers, many of whom had been moved hastily from one hospital to another in their own country. The great majority of these men are doing well, though several are severely wounded. Almost all of them have heard nothing of their families for weeks, and do not even know whether their wives and children are still alive. As has been already explained, it has been unavoidably necessary to divide the hospital into two parts. The smaller city division is full, but the larger Southmead portion, installed in the new premises of a workhouse infirmary, seems to be susceptible of almost indefinite expansion."

Professional Classes War Relief Council.—As we go to press we are asked to draw the attention of our readers to an organisation which has been formed with the above title for the practical assistance of members of the professional class who are in distress through the stringent conditions brought about by the war. The object of the council is to seek out such cases, and by advice and, where necessary, by assistance to render what help is possible. The council contains representatives from the chief professional institutions and from the societies which already exist for the organisation of relief, and its object is to coördinate, without any attempt at controlling, the activities of these institutions. In the directions of education of children, training for employment at home or in the colonies, maternity assistance, and the provision of temporary employment, it is hoped that the council through its special committees will be able to deal with each family as a unit, and thus help the dependents of professional men and women in a more effective and economical way than would be possible by mere grants of money. The medical members of the council, whose offices are at 13 and 14, Prince's-gate, London, S.W., are Sir John Tweedy and Dr. Samuel West, president and treasurer of the Royal Medical Benevolent Fund, and Dr. Mary Scharlieb, and further information as to the objects and methods of the council will be furnished on application to the honorary secretaries.

The Welsh Military Hospital.—We have so far not described this base hospital, the Welsh Hospital, which was inaugurated at a largely attended public meeting held at Cardiff on August 11th, under the presidency of the Lord Mayor (Mr. J. Robinson, M.R C.S., J.P.). Through the medium of the British Red Cross Society it was offered, on behalf of the Principality, to the War Office, for service with the Expeditionary Force, by H.R.H. the Prince of Wales. The offer was accepted, and it was requested that the hospital should be located in the first place at Netley, to go overseas later when required. The Welsh Hospital is therefore now situated on the recreation ground of the Royal Victoria Hospital—a very healthy spot. It was ready to receive patients on Oct. 26th. The buildings of the hospital are of wood and galvanised iron and are portable. The honorary architects are Messrs. E. T. and E. Stanley Hall, of London, the architects of the Manchester Royal Infirmary and the Welsh National Memorial.

The hospital has accommodation for 104 patients in four ward pavilions, each containing a 24-bedded ward, two single-bedded wards, and the usual accessory rooms. The other pavilions are: Entrance (in which is included post-mortem room and mortuary), administrative, operating theatre, pathology, X rays, and dispensing, mess rooms, kitchen and stores, laundry, staff quarters. The different pavilions are linked up by an open corridor. The operating theatre has been specially constructed. Heating is by gas and by anthracite stoves, lighting by electricity, hot water-supply from "calefonts," and the sanitary fittings connect up with an adjacent drain.

The total staff numbers 48. The commanding officer and senior surgeon is Lieutenant-Colonel A. W. Sheen, R.A.M.C.(T.F.), surgeon to King Edward VII. Hospital, Cardiff. The other medical officers are Mr. Fergus Armstrong, M.D. Edin., F.R.C.S. Edin., Mr. T. Garfield Evans, M.D. Lond., Mr. Sydney J. Rowlands, M.D. Liverp., and Mr. Bernard G. Klein, M.D. Oxon. The quartermaster is Mr. E. J. August, and all these officers have been given temporary commissions in the Royal Army Medical Corps. Four senior medical students are engaged as dressers, and the rest of the male staff consists of a sergeant-major, two sergeants, and 12 orderlies. The matron is Miss M. Martin, who served with the Welsh Hospital in the South African War, and there are 12 nursing sisters, a housekeeper, and a domestic staff. The Earl of Plymouth is the President, the Lord Mayor of Cardiff chairman of the executive committee, and Mr. C. Hope the honorary general secretary.

The response to the appeal for funds signed by the Lord Mayor of Cardiff and Sir W. J. Thomas, honorary treasurer of the hospital, was immediate and enthusiastic, over £10,000 being subscribed in a week. The sum asked for is £25,000, and this amount has nearly been reached. £250 is regarded as endowing a bed to be named after the donor, and there are already 62 such endowed beds. All Wales has taken part in the movement, and many beds are endowed from North Wales. Sir William James Thomas endowed ten beds, and Mr. David Davies, of Llandinam, four beds; the Earl of Plymouth and the Marquis of Bute each two beds. A ladies' committee, under the chairmanship of the Lady Mayoress of Cardiff, have obtained garments and linen for the hospital estimated to be worth £1000. When required the hospital is ready to pack up and move as far as its furniture and equipments are concerned at short notice. The buildings will take longer to move, and perhaps existing buildings will be occupied in the new location. During its sojourn at Netley the staff will be further trained in drill, discipline, and duties in connexion with a military hospital under an experienced commanding officer, so as to render the hospital thoroughly fitted for any work it may be called upon to do.

GERMAN MEDICAL CASUALTIES.—The first German official casualty list of military surgeons is stated to include the names of 74 killed, 37 wounded, 13 missing, 3 prisoners, and 8 died from sickness. According to a German periodical the losses of the German military medical staff during the war of 1870 were 66 in all, of whom 9 were killed outright, 2 died of wounds, and 55 died from disease. The Austrian medical corps are stated to have lost during the present campaign 8 killed, 25 wounded, and 1 missing, while 22 are suffering from illness of various kinds. A newspaper correspondent in Copenhagen announces that already 118 military surgeons have been decorated with the German Iron Cross.

Mr. Robert Fox-Symons has been added to the Anglo-French hospital committee which was formed recently for the purpose of coördinating British offers of help for the French sick and wounded. Since Mr. G. H. Makins's departure for the front as consulting surgeon to the Forces Mr. Fox-Symons has been in charge of the department of the British Red Cross Society which deals with auxiliary home hospital accommodation.

THE NATIONAL INSURANCE ACT.

LOCAL MEDICAL COMMITTEE FOR THE COUNTY OF LONDON.—At a meeting of this Committee on Oct. 21st, at the offices of the Metropolitan Asylums Board, Dr. James Galloway in the chair, a report was considered from a special subcommittee appointed to consider and report upon the constitution, powers, duties, and finance of the Committee, and recommendations were adopted that the interests of the personnel of the Local Medical and Panel Committees for the County of London should be identical; that until it is possible to secure that the personnel of the two committees is identical the Local Medical Committee should offer advice on matters connected with the administration of the benefits of insured persons only when that advice is sought; that the Local Medical Committee should exercise their powers and duties in the closest coöperation with the Panel Committee; and that an executive committee be appointed to consider and report from time to time as may be required upon all matters referred to the Local Medical Committee. The executive committee appointed will consist of Dr. James Galloway (chairman), Dr. B. A. Richmond (secretary), together with Dr. J. A. Butler, Dr. H. J. Cardale, Mr. J. V. C. Denning, Dr. Mina Dobbie, Mr. W. McAdam Eccles, Dr. M. Greenwood, Dr. W. Kingdon, Dr. J. T. Richards, Mr. J. J. Scanlan, and Dr. A. G. Southcombe. With regard to the proposed federation of Local Medical and Panel Committees, it was resolved that the Committee were unable to accept membership of the federation under its constitution as at present drafted.

DUPLICATION IN INDEX REGISTERS.—At a recent meeting the Sheffield Insurance Committee was informed that the difference between the number of insured persons shown on the index registers of the societies for Sheffield and the number estimated by the Commissioners as being insured there was 24,000, the figures in the former case being 172,000 and in the latter 148,000. It was pointed out that this might mean a considerable shortage in the money to be applied to the payment of medical benefit. The Commissioners had intimated that the number shown by the index registers throughout the country was greatly in excess of the number of persons insured, and that they were only prepared to pay upon the number insured. Members of the Sheffield committee strongly protested against deduction being made from the sum claimed by Sheffield upon any principle involving the taking of an average throughout the country, on the ground that records in Sheffield were carefully kept and checked, and that the committee was not prepared to suffer for inaccuracies allowed by other committees. It was decided that the finance and panel committees should confer on the subject.

PROPOSAL TO MAKE TUBERCULOSIS THE CARE OF THE STATE.—At the National Conference of Friendly Societies concluded recently at Norwich a proposal of the executive committee was discussed, and a resolution in its favour carried, to the effect that sanatorium benefit should be eliminated from the Insurance Act and that the State should provide for all patients suffering from tuberculosis. On behalf of Scotland it was urged that the Scottish local authorities had created their machinery and would object to it being "scrapped," and it was also argued that the organisation in Wales for combating consumption was such that Wales should be excluded from the resolution. The amendments proposed were, however, lost. A resolution was also carried at the conference calling upon the Government to make a grant of half-a-crown per member per annum towards the cost of providing medical attendance and medicine for members of Friendly Societies who at the passing of the Insurance Act were prevented from becoming insured by reason of age or ill-health.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—J. A. A. Boddy (Sections I. and II.), Manchester M. M. Burt (Sections I. and II.), Birmingham; P. H. Burton (Sections I. and II.), London Hospital; W. Brown (Section I.), Oxford and King's College Hospital; C. H. Fischel (Section I.), Middlesex Hospital; and J. Stephenson (Sections I. and II.), Guy's Hospital.

Medicine.—W. Brown (Section II.), Oxford and King's College Hospital; H. H. Fairfax (Section I.), Charing Cross Hospital; C. H. Fischel (Section II.), Middlesex Hospital; N. W. Rawlings (Section I.) and G. Robinson (Sections I. and II.), Manchester; J. Stephenson (Sections I. and II.), Guy's Hospital; W. C. S. Wood (Sections I. and II.), King's College Hospital; and A. K. S. Wyborn (Section II.), Middlesex Hospital.

Forensic Medicine.—W. Andrew, King's College Hospital; C. E. Clarke, Bombay; A. J. Fradersdorff, Guy's Hospital; N. Hoffmeister, Middlesex Hospital; G. Robinson, Manchester; J. Stephenson, Guy's Hospital; and W. C. S. Wood, King's College Hospital.

Midwifery.—A. U. L. Bennet, Royal Free Hospital and Dublin; M. M. Burt, Birmingham; C. S. Dodson, Cambridge and University College Hospital; J. Stephenson, Guy's Hospital; and W. C. S. Wood, King's College Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: P. H. Burton and J. Stephenson.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, AND ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—The quarterly examinations of the above Board, held in Edinburgh, were concluded on Oct. 26th, with the following results:—

First Examination.—Mahmoud Abdel Kader Mofreh, William Bruce Lawson, Archibald Buchanan MacDougall, Ernest Ebenezer Bronstorph, and Hassan Amin Madwar, and two passed in Physics and three in Biology.

Second Examination.—Jackson Baird Minford, Nicholas Johannes Laubscher, Henry Morley, Robert Woodside, Frank Jones, John Lavens West, Paul Vertannes, William Ulie Desmond Longford, Clifford Pullan, and George Murray Shaw Lindsay, and three passed in Anatomy and five in Physiology.

Third Examination.—Elliot Paxton Dewar, Gulabrai Teckchand Makhijani, Yeshwant Narayan Kadam, Charles Evelyn Meryon, John Robert Beith Robb, William Graham Bowie, Maurice Andrew

White, and Alfred Edwin Elliott, and three passed in Materia Medica.

Final Examination.—Allan Beresford Hawkins, British West Indies; Florence Winifred Heyworth, Liverpool; Norman Hamilton Brewster, British West Indies; William Henry O'Grady, co. Mayo; John Ramsay Fleming, Airdrie; Gerald Christopher Stanley Perera, Ceylon; William Clarke Fraser, Dundee; Arthur Edwin James, Auckland, New Zealand; Leonard Owen Weinman, Colombo; Arthur Alexander Murison, Dumbarton; John Martin, Glasgow; Gwilym Llewelyn Pierce, Llangollen; William Smith O'Loughlin, Limerick; and Khusru Roostamji Mehta, Calcutta; and 4 passed in Medicine, 10 in Surgery, 12 in Midwifery, and 11 in Medical Jurisprudence. (These candidates received their diplomas.)

University of Glasgow.—In the Third Professional Examination (Old or New Ordinance) and Fourth Professional Examination (New Ordinance) the following have passed in the subjects indicated (P., Pathology; M., Medical Jurisprudence and Public Health):—

William Dick Allan (P.), William Baird (P.), Joseph Edward Bannen (P.), Thomas Blackwood (P.), Archibald Campbell Brown (P.), Henry Drummond Brown (P.), John Alexander Buchanan (P.), Stuart Ernest Armstrong Buckley (P.), Duncan Cameron (P.), David Campbell, M.A., B.Sc. (P.), Dugald Stewart Campbell (M.), William Campbell (P., M.), Moses Wolffe Cantor, B.Sc. (P., M.), Joseph Chalmers (P.), David Clyde (P.), William Kerr Connell (P.), Alexander Findlay Cook (P.), Archibald Shankland Cook (P.), Walter Gow Cook (P.), John Norman Cruickshank (P.), John Freeland Cunningham, M.A. (M.), Robert Cunningham (P.), Alexander Dick (M.), Ronald Stevenson Dickie (P., M.), William Donald (M.), Samuel Norman Dykes (P.), Lewis Livingstone Fotheringham (P.), Matthew Mair Frew (P.), David Gould Gardiner (M.), Robert Stuart Gibson, B.Sc. (M.), Norman William Gilchrist (M.), Samuel John Henderson (P.), William Yuill Jamieson (P., M.), Stewart Johnstone (P.), George Kirkhope (P.), John Crawford Knox, B.Sc. (M.), Robert Kyle (P., M), James Alexander Leiper (P.), Robert Lindsay, M.A. (P.), Hugh Lawrence M'Cormick (P., M.), Donald Kerr MacDougall (P.), David M'Farlane (M.), James Wallace Macfarlane (P.), John Mandeville Macfie (M.), John MacInnes (P.), James Murdoch MacKay (P.), Keith Stuart Macky (P.), Alexander Fisher M'Millan (P.), David M'Neill (P., M.), Eric John MacPhail (P.), Noah Morris, B.Sc. (P., M.), Alexander Morton (P.), John Hughes Murray (M.), William O'Brien (P.), Arthur William Panton (P.), Thomas Smith Paterson (M.), James Herbert Paul, M.A., B.Sc. (P., M.), William James Poole (M.), William Burns Primrose (M.), John King Rennie B.Sc. (M.), James Richardson (P.), Robert Rodger (P.), George William Ronaldson (P.), Alexander Forbes Ross (P.), Kenneth M'Alpin Ross (P.), Angus M'Alpine Scott (P.), William Frederick Shanks (M.), James Steel (P.), John Steele (P.), Abraham Raphael Steinberg (P.), William Mitchell Stewart (P.), John Stirling, B.Sc. (M.), George Carson Swanson (P.), Robert Taylor (P.), Herbert Watt Torrance (P.), John Dalglish Watson (P., M.), William James Cunningham Watt (P.), and Robert James Wilson (P., M.).

Women.—Christina Blair Buchanan (P.), Maud Christine Cairney (P.), Ann Kelly Cormack (M.), Winifred Jane Crawford (P.), Jane Beattie Davidson (P.), Jessie Crawford Gilchrist (P.), Jean Lawrie Hamilton (P.), Janet Fraser Henderson (M.), Helen Isobel Winifred Kerr (P.), Dorothy M'Cubbin (P., M.), Mary Ann MacLennan MacLean (P.), Effie Cowan M'Vie (P., M), Elizabeth Stewart Martin (P.), Margaret Kay Mitchell (P.), Janey Lamond Munro (M.), Helen Young Murdoch, M.A. (P.), Mary Helen Routledge (P.), Mary Scott (P.), Mary Ishbel Sinclair (M.), Jane Stalker (P), Alison Edgar Wilson (P.), and Marion Baillie Darling Wilson (P.).

Dr. Richard Whittington was on Oct. 24th elected a member of the Brighton town council.

A Medical Lord Mayor.—Dr. J. G. Gordon-Munn has been selected as the new Lord Mayor of Norwich for the coming year.

University of Cambridge. — The Special Board for Medicine have elected Professor Howard Marsh, Master of Downing College, as their representative upon the General Board of Studies in the University. Mr. W. B. Hardy, F.R.S., tutor of Gonville and Caius College, has been appointed a manager of the Gerstenberg studentship in moral philosophy and metaphysics, in place of the late Dr. W. H. Gaskell. Mr. J. E. Purvis, St. John's College, has been re-appointed University lecturer in chemistry and physics in their application to hygiene and preventive medicine.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Addison, Kate, M.B., B.S. Lond., has been appointed Clinical Assistant in the Skin Department at the Royal Free Hospital.

Barnes, H. W., M.B. Cantab., L.R.C.P. Lond., M.R.C.S., D.P.H., has been appointed Acting Medical Officer of Health and School Medical Officer for Luton.

Blair, Miss A., M.B., B.S., has been appointed Senior Clinical Assistant in the Gynæcological Department at the Royal Free Hospital.

Blakeway, H., F.R.C.S. Eng., M.S. Lond., has been appointed Acting Assistant Surgeon to the Royal Free Hospital.

Gardiner, Harold, M.B., B.S. Lond., F.R.C.S., has been appointed Acting Assistant Surgeon to the Royal Free Hospital.

Garstang, W., M.B., Ch.B. Vict., has been appointed Medical Officer of Health to the Hucknall Urban District Council.

Lloyd, Muriel, M.B., B.S. Lond., has been appointed Resident House Physician at the Royal Free Hospital.

Macpherson, Louis, M.D. Edin., has been appointed Tuberculosis Officer for the Counties of Mid- and West Lothian and Peeblesshire.

McCormick, J., M.B., B.Ch. N.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Buncrana District of the county of Donegal.

Moon, G. B., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Second Assistant Medical Officer at the Surrey County Asylum Netherne.

O'Reilly, E., M.B., B.S. R U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Ballyhaise District of the county of Cavan.

Paterson, Miss M. R., M.R.C.S., L.R.C.P., has been appointed Resident House Physician at the Royal Free Hospital.

Pillman, Miss M. E. C., M.R.C.S., L.R.C.P., has been appointed Resident House Surgeon at the Royal Free Hospital.

Powell, Miss E. M., M.R.C.S., L.R.C.P., has been appointed Resident House Surgeon at the Royal Free Hospital.

Salisbury, Walter, M.B., B.S. Lond., has been appointed Resident Medical Officer at Queen Charlotte's Lying-in Hospital.

Smith, W. Maule, M.D. Edin., M.R C.P. Edin., has been appointed Medical Superintendent to the West Bromwich and Walsall Joint Unions.

Stuart, J., L A.H. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Belturbet District of the county of Cavan.

Vinter, C. H. S., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Framlingham District of the county of Suffolk.

Walsh, Harold V., M.B , B.Ch. Belf., has been appointed Assistant Resident Medical Officer at Queen Charlotte's Lying-in Hospital.

West, T. Ruddock, M.B., B.S. R.U.I., has been appointed Assistant School Medical Officer and Assistant Medical Officer of Health of Norwich.

Whitney, Cyril U., L.R.C.P. Lond., M.R.C.S., has been appointed Deputy Medical Officer of Health of Maldon, Essex.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Bethnal Green Infirmary, Cambridge-road, N.E.—Two Assistant Medical Officers. Salary at rate of £200 per annum, with apartments, board, and washing.

Birkenhead Borough Hospital.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birmingham Corporation.—Female Medical Officer for Infant Consultation Work. Salary £300 per annum.

Birmingham General Hospital.—House Governor and Secretary. Salary £500 per annum.

Birmingham Union.—Dudley-road Infirmary: Third Assistant Medical Officer and Fourth Assistant Medical Officer. Salary at rate of £170 and £160 per annum respectively. Erdington Infirmary and Cottage Homes: Assistant Medical Officer. Salary at rate of £200 per annum. Selly Oak Infirmary: Assistant Medical Officer. Salary at rate of £180 per annum. Apartments, rations, laundry, and attendance in each case.

Bolton Infirmary and Dispensary.—Second House Surgeon. Salary £120 per annum, with apartments, board, and attendance.

Bootle, Corporation Hospital for Infectious Diseases.—Resident Medical Officer, unmarried. Salary £250 per annum, with board, washing, and apartments.

Bournemouth, Royal Victoria and West Hants Hospital.—House Surgeon, unmarried, for six months. Salary £100 per annum, with board, lodging and washing.

Bradford Royal Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

Brentwood Asylum, Brentwood, Essex.—Locum Tenens Assistant Medical Officer. Salary £5 5s. per week, with board, attendance, lodging, and washing.

Bristol City Asylum, Fishponds.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

Bromsgrove, Worcestershire Asylum.—Deputy Medical Superintendent and Second Assistant Medical Officer. Salary £300 and £225 per annum respectively, with apartments, board, washing, and attendance.

Burslem, Haywood Hospital.—Female Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

Canterbury, Kent County Asylum, Chartham.—Junior Assistant Third Medical Officer, unmarried. Salary £250 per annum, with quarters, board, washing, &c.

Canterbury Mental Hospital.—Assistant Medical Officer. Salary £250 per annum, with board, lodging, laundry, &c.

Carshalton, Surrey, Queen Mary's Hospital for Children.—Assistant Medical Officers. Salary at rate of £250 per annum, with board, lodging, and washing.

Chelsea Hospital for Women, Fulham-road, S.W.—House Surgeon for six months. Salary £80 per annum.

Cheshire Education Committee.—Fourth Assistant to the Chief School Medical Officer. Salary £350 per annum.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

City of Westminster Union Infirmary, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

County of London.—Lecturers in First Aid, Home Nursing, Health, and Infant Care. Salary £1 1s. a lecture.

DERBY, DERBYSHIRE COUNTY COUNCIL.—Assistant Tuberculosis Officer. Salary £400 per annum.

DOUGLAS, ISLE OF MAN, NOBLE'S HOSPITAL.—Resident House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

EXETER CITY ASYLUM.—Medical Superintendent. Salary £500 per annum, with unfurnished house, coal, lighting, laundry, &c.

GLASGOW UNIVERSITY.—Examiners.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £140 per annum, with board, lodging, and washing.

HARROW-ON-THE-HILL URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary at rate of £200 per annum.

HUDDERSFIELD ROYAL INFIRMARY.—Senior and Junior Assistant House Surgeons. Salary £80 per annum each, with board, rooms, and washing.

HULL ROYAL INFIRMARY.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

IPSWICH, EAST SUFFOLK HOSPITAL.—Resident House Physician

KILMARNOCK INFIRMARY.—Female House Surgeon. Salary £80 per annum, with board, &c.

KING'S LYNN, LYNN AND WEST NORFOLK HOSPITAL.—House Surgeon. Salary £150 per annum.

LEICESTER, LEICESTERSHIRE EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary at rate of £300 per annum.

LIVERPOOL, BROWNLOW HILL INSTITUTION.—Resident Assistant Medical Officer. Salary £140 per annum, with apartments.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—House Surgeon. Salary £50 per annum.

MACCLESFIELD, PARKSIDE ASYLUM.—Medical Superintendent. Salary £650 per annum.

MAIDSTONE, KENT COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £280 per annum, with board, quarters, attendance, washing, &c.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER POOR-LAW INSTITUTION, Crumpsall.—Second Resident Assistant Medical Officer and Junior Resident Assistant Medical Officer, both unmarried. Salary £180 and £160 per annum respectively, with rations, apartments, fire, light, washing, and attendance.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

NEWCASTLE, CO. WICKLOW, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Assistant Resident Medical Officer. Salary at rate of £200 per annum, with board and residence. Also Laboratory Assistant. Salary £1 per week and cottage.

NEWCASTLE-UPON-TYNE, HOSPITAL FOR SICK CHILDREN.—Senior Medical Officer. Also Junior Medical Officer. Salary £100 and £80 per annum respectively, with board, lodging, and laundry.

NEWCASTLE-UPON-TYNE AND NORTHUMBERLAND SANATORIUM FOR CONSUMPTIVES, Barrasford, North Tyne.—Resident Medical Officer, unmarried. Salary £350 per annum, with board, residence, and laundry.

NEWPORT (MON.), ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

NORTHAMPTON GENERAL HOSPITAL.—Two House Surgeons. Salary £120 per annum, with apartments, board, washing, attendance, &c.

NOTTINGHAM CHILDREN'S HOSPITAL.—Female House Surgeon for six months. Salary at rate of £130 per annum, with apartments, board, and washing.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £100 per annum, with board, residence, and laundry. Also Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

OLDHAM ROYAL INFIRMARY.—Third House Surgeon for six months. Salary at rate of £100 per annum, with board and residence.

PRESTON, COUNTY ASYLUM, Whittingham.—Junior Assistant Medical Officer, also Assistant Medical Officer to also act as Pathologist, unmarried. Salary commencing £250 per annum, with board, apartments, &c.

PRESTON ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary £150 per annum, with rooms, board, and laundry.

RICHMOND, SURREY, ROYAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, apartments, and washing.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon, unmarried. Salary £115 per annum.

ST. ALBANS, HERTS COUNTY ASYLUM, Hill End.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, with board, lodging, and washing.

ST. MARK'S HOSPITAL FOR CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, City-road, E.C.—Temporary Pathologist and Bacteriologist. Salary at rate of £100 per annum.

ST. MARYLEBONE INFIRMARY, Packham-street, Notting Hill, W.—First Temporary Assistant Medical Officer, unmarried. Salary £225 per annum with apartments, rations, and washing.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Resident Medical Officer and Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

ST. PANCRAS NORTH INFIRMARY, Dartmouth Park Hill, Highgate, N.—Senior and Junior Assistant Medical Superintendents. Salaries at rate of £175 and £140 per annum respectively, with apartments, board, and washing.

ST. PANCRAS SOUTH INFIRMARY, Pancras-road, N.W.—Senior Assistant Medical Superintendent and Senior Assistant Medical Officer of House adjacent. Salary at rate of £225 per annum, with board, apartments, and washing.

SALFORD ROYAL HOSPITAL.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

SALISBURY (GENERAL) INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Anæsthetist. Salary £15 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD, EAST-END BRANCH OF THE CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board and residence.

SHEFFIELD ROYAL INFIRMARY.—Two House Surgeons and Assistant House Physician for six months. Salary £100 per annum each, with board and residence.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich Grove, S.E.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salary at rate of £170 and £160 per annum respectively, with board, lodging, and washing.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—House Surgeon, unmarried. Salary at rate of £120 per annum, with board, residence, and washing

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.

SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, and laundry.

TAUNTON, TAUNTON AND SOMERSET HOSPITAL.—Senior House Surgeon and Assistant House Surgeon. Salaries £120 and £80 per annum respectively, with board, lodging, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

UNIVERSITY OF LONDON.—University Chair of Anatomy. Salary £600 per annum.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £230 per annum, with apartments, board, washing, and attendance. Also Female Assistant Medical Officer. Salary £235 per annum. Also Locum Tenens Assistant Medical Officer. Apartments, board, travelling expenses. Salary as arranged.

WALSALL, COUNTY BOROUGH OF.—School Medical Inspector and Assistant Medical Officer of Health. Salary £300 per annum.

WALSALL AND DISTRICT HOSPITAL.—Senior House Surgeon and Junior House Surgeon and Anæsthetist. Salary £150 and £110 per annum respectively, with board, residence, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Senior House Physician. Salary £120 per annum, with board, residence, and washing.

WESTMINSTER HOSPITAL, S.W.—Ophthalmic Surgeon.

WESTMORLAND CONSUMPTION SANATORIUM AND HOME, Meathop, Grange-over-Sands.—Assistant Medical Officer. Salary £200 per annum, with apartments, board, and laundry

WORCESTER COUNTY AND CITY ASYLUM, Powick, near Worcester.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., giv notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Battersea, in the county of London.

Births, Marriages, and Deaths.

BIRTHS.

FINIGAN.—On Oct. 18th, at The Bridge House, Fordingbridge, the wife of Captain D. O'C. Finigan, M.D., of a daughter.

SHIPWAY.—On Oct. 25th, at 61, Queen Anne-street, W., the wife of Francis E. Shipway, M.A., M.D. Cantab., of a daughter.

MARRIAGES.

CAPON—SEELY.—On Oct. 24th, by special licence, at St. John's Church, Paddington, by the Rev. Canon Lillingston, M.A., Herbert Vawdrey Capon, 2nd East Anglian Brigade, R.F.A., only son of Dr. and Mrs. H. J. Capon, of 40, Upper George-street, W., to Ruby, daughter of the late Mr. Alfred Seely and Mrs. Seely, The Gables, Gressenhall, Norfolk.

COCKCROFT—PEACOCK.—On Oct. 28th, at St. Mary's and St. Alkelda's Church, Middleham, by the Rev. H. G. Topham, M.A., George, second son of the late William Cockcroft, Solicitor, Rochdale, and Mrs Cockcroft, Middleham, to Mary, second daughter of M. D. Peacock, Manor House, Middleham. At Home, Dec. 2nd and 3rd.

COLLINS—MERRICK.—On Oct. 21st, at St. Mary's, Barnes, Algernon Boniface Collins, M.R.C.S., L.R.C.P., to Marie Adéle, eldest daughter of Mr. and Mrs. William Gordon Merrick, of Barnes, S.W

DEATHS.

SHINE.—On Oct. 22nd, at Galtee More, Barnsley, John Power Shine, M.B., Ch.B. R.U.I., aged 45.

SIMPSON.—On Oct. 22nd, at Horton-crescent, Rugby, James Herbert Simpson, M.D., aged 64.

SMITH.—On Oct. 23rd, Eliza Jane, the loved wife of John Percival Smith, L.R.C.P., at 370, London-road, South Lowestoft.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

HEALTH AND SANITATION IN THE BAHAMAS.

ACCORDING to the Blue-book of the Bahamas, just received at the Colonial Office, the estimated population of the islands on Jan. 1st, 1914, was 55,766. The births in 1913 numbered 1907, as against 1824 in 1912. The deaths were 1433, as against 1498 in 1912. The birth-rate was 34 per 1000, and the death-rate 25·6 per 1000. Whooping-cough was epidemic during the year over the whole colony. There were 30 cases of typhoid fever, of which 8 died. The mean temperature for the year was 78·1, and the rainfall 39·96 inches. As regards water-supply, the commonest source is wells. From an analysis which has been made at the Imperial Institute it appears that the water is hard, contains large proportions of chlorine, and is in most instances polluted. The other source of supply is rain water stored in tanks, tubs, and underground cisterns. The services of a noted expert, Mr. H. H. Humphreys, were obtained with the view of demonstrating whether a supply of fresh water sufficient for the needs of the city and suburbs of Nassau could be obtained by boring or otherwise, and his report is to be laid before the House of Assembly.

The Bahamas General Hospital was established in 1809 as a poorhouse and hospital for the poor and infirm of the island. Since then the institution has grown steadily, and its functions have been extended in many directions. In 1845 it was placed under a Board of Commissioners appointed by the Governor, and now comprises the hospital proper, the infirmary, dispensary, the lunatic asylum, and the leper compound. The feasibility of forming a leper colony on one of the small islands is under consideration. This is necessary if the Lepers Act, 1913, which provides for compulsory segregation in certain cases, is to be made operable. As a winter health and pleasure resort Nassau (the capital) has for many years past attracted a considerable number of American and Canadian visitors. It is estimated that during the year about 2600 tourists arrived, in addition to 1231 visitors from pleasure steamers staying a few hours on their way north or south.

A MEDICAL FAMILY.

To the Editor of THE LANCET.

SIR,—The death of Mr. Alfred Pern, F.R.C.S., on Oct. 12th, at Botley, Hants, briefly noted in THE LANCET of Oct. 17th, p. 975, recalls a noteworthy fact. He was the father of a large family, among whom were no fewer than seven sons, all educated at Marlborough College and possessing the same medical qualifications (Conjoint M.R.C.S., L.R.C.P.) all being at present in practice, four in England and three in Australia. I venture to think this must be a record.

I am, Sir, yours faithfully,
London, Oct. 28th, 1914. SEPTEM.

CENTIGRADE AND FAHRENHEIT.

To the Editor of THE LANCET.

SIR,—As I observe that your readers are interested in methods of converting degrees Centigrade into degrees Fahrenheit, you might like to publish the following original mechanical method of making rough thermometer scales. Take a piece of plain paper, not too thick, and measure off a length of seven inches. Fold it four times in half successively and neatly. The paper will have 15 creases. Starting from the bottom crease number the first crease 8, the next 16, the next 24, the next 32, and so on, up to 120 at the top crease. This paper will now act as a Fahrenheit scale, the 32 crease being the freezing point, at which lay the end of a foot-rule or inch measure, and mark on the paper 0 Centigrade opposite the 32 Fahrenheit; then one inch up the rule mark 10° C., at two inches up mark 20° C., and so on. Of course each half inch up will be 5° C. extra, and thus two and a half inches will be 25° C., and if the rule should be divided into tenths of an inch all the degrees can be marked off on the paper easily. As regards the Fahrenheit scale, it is obvious that each crease marking off 8° it can easily be further halved into 4°, and again into 2°, and thus completed in detail if required. For a rough and ready method it will be found very close to accuracy. All that is required is a piece of paper and an inch measure.

I am, Sir, yours faithfully,
London, Oct. 23rd, 1914. F.

THE Buxton council have resolved "that all officers, soldiers, and sailors of the Allied Forces invalided to Buxton be granted the Buxton mineral water treatment free of cost, such treatment to be prescribed by a medical practitioner." It is hoped that this offer will be extensively taken advantage of, as the waters of Buxton, combined with the dry bracing air, should be of particular value in cases of rheumatism contracted by our army and allies whilst in the trenches.

Dr. D. Barty King will give a lecture, illustrated by the epidiascope, on "Germany in War Time," with an account of his experiences amongst the German wounded, to the nurses of the Tuberculosis School of the Royal Hospital for Diseases of the Chest, City-road, on Nov. 3rd.

THE Thermogene Company, Limited, desire to make it known that Thermogene was invented by a Belgian chemist, Charles Vandenbroeck, of Brussels, from whom it was acquired by the present British proprietors. It is entirely British owned and made by British labour at the company's factories at Haywards Heath, Sussex.

WE are asked to state that the War Office has accepted a gift of 500 gallons of Acrosyl to be distributed amongst the military hospitals in the United Kingdom. Acrosyl is a saponified cresylic disinfectant containing 50 per cent. of specially treated cresols.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Hon. R. J. Strutt: Luminous Vapours Distilled from the Air, with Applications to the Study of Spectrum Series and their Origin. II.—Prof. J. N. Collie, Mr. H. S. Patterson, and Mr. I. Masson: The Production of Neon and Helium by the Electrical Discharge.—Prof. C. H. Lees: On the Flow of Viscous Fluids through Smooth Circular Pipes.—Mr. F. O. Rice: Quantitative Measurements of the Absorption of Light. I., The Molecular Extinctions of the Saturated Aliphatic Ketones (communicated by Prof. E. C. C. Baly).—Prof. W. M. Thornton: The Ignition of Gases by Condenser Discharge Sparks (communicated by Sir Charles Parsons).—Mr. E. G. Bilham: The Spark Spectrum of Nickel under Moderate Pressures (communicated by Mr. A. Fowler).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

WEDNESDAY.

SECTION OF OPHTHALMOLOGY (Hon. Secretaries—Leslie Paton, Elmore W. Brewerton): at 8 P.M.

Cases:

Mr. A. Hugh Thompson: (1) Complete Loss of Pupillary Light Reflex in One Eye with Retention of Contraction to Convergence; (2) Persistent One-sided Loss of Pupillary Reflex in a Healthy Adult.

Mr. Bishop Harman: (1) Congenital Entropion; (2) Notes of a Case of High Myopia in an Infant.

Papers:

Mr. Holmes Spicer: Bubbles in the Anterior Chamber.

Mr. H. B. Grimsdale: The Necessity of a Definition of Blindness.

FRIDAY.

SECTION OF LARYNGOLOGY (Hon. Secretaries—Cecil I. Graham, W. D. Harmer): at 4 P.M.

Cases and Specimens:

Will be exhibited by Dr. Hill, Dr. Lambert Lack, Dr. Dan McKenzie, Mr. Herbert Tilley, Dr. Coubro Potter, Dr. Irwin Moore, Dr. Jobson Horne, &c.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Meeting.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, Society's Rooms, West London Hospital, Hammersmith-road, W.

FRIDAY.—8 P.M., Special Clinical Evening.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY.—5 P.M., Bradshaw Lecture:—Dr. N. Tirard: Some Clinical Contributions to the Study of Glycosuria.

THURSDAY.—5 P.M., Dr. C. A. Mercier: Leper Houses and Mediæval Hospitals.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Museum Demonstrations for Advanced Students and Medical Practitioners:—

MONDAY.—5 P.M., Mr. S. G. Shattock: Specimens illustrating Repair.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. J. B. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Nose, Throat, and Ear (Mr. H. D. Gillies). X Rays and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 4.30 P.M., Special Demonstration of Selected Skin Cases. 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:- Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

CHARING CROSS HOSPITAL, Chandos-street, Charing Cross, W.C.

MONDAY.—3 P.M., Huxley Memorial Lecture on Recent Advances in Science in Relation to Medicine and Surgery:—Sir Ronald Ross: Malaria and the Transmission of Diseases.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Lecture:—Mr. L Paton: Clinical Cases.
FRIDAY.—3.30 P.M., Lecture:—Mr. L. Paton: Clinical Cases.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Sebaceous Dermatitis.

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

THURSDAY.—ANCOATS HOSPITAL, Mill street.—4.30 P.M., Dr. A. Renshaw: Collection of Pathological Material for Examination.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: Abnormal Presentations (continued). 11 A.M., Examination of Patients and Minor Operations.

TUESDAY.—10 A.M., Major Operations.

WEDNESDAY.—10 A.M., Obstetrical Lecture: Asphyxia Neonatorum. 11 A.M., Examination of Patients and Minor Operations.

THURSDAY.—10 A.M., Major Operations.

FRIDAY.—10 A.M., Gynæcological Lecture: Genital Prolapse. 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 28th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 22	29·680	S.	0·17	80	58	48	51	53	Raining
,, 23	29·724	S.	0·08	70	59	53	53	54	Overcast
,, 24	29·796	S.	...	91	61	52	53	53	Overcast
,, 25	29·960	S.	0·27	69	60	53	54	53	Cloudy
,, 26	29·852	W.	0·06	95	61	52	51	53	Fine
,, 27	29·740	S.	...	93	58	47	51	51	Overcast
,, 28	29·670	S.W.	...	72	53	40	41	42	Fine

The following magazines, journals, &c. have been received:—Therapeutic Gazette, Journal of Tropical Medicine and Hygiene, Journal of Nervous and Mental Disease, Archives of Internal Medicine, Mercy and Truth, Pacific Medical Journal, Journal of Physiology, Cleveland Medical Journal, Homœopathic Recorder.

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The Huxley Lecture

ON

RECENT ADVANCES IN SCIENCE AND THEIR BEARING ON MEDICINE AND SURGERY.

MALARIA AND THE TRANSMISSION OF DISEASES.

Delivered at Charing Cross Hospital on Nov. 2nd, 1914,

BY SIR RONALD ROSS, K.C.B., F.R.S., M.D., F.R.C.S., D.Sc., LL.D., D.P.H.

MR. CHAIRMAN, LADIES, AND GENTLEMEN,—I can imagine nothing that would have delighted Huxley more than the bearing of recent advances in science on the medicine of the tropics. Indeed, this latest victory of science, achieved after his time, may be considered as a culminating point in the practical application of science to the needs of suffering humanity. The victory has been won, not only by medicine, but by medicine and zoology fighting side by side—by those two great branches of science in which he himself was so proficient. Let me now describe the details of the campaign.

THE TRANSMISSION OF DISEASE.

It is curious that though the transmission of disease is a matter of such vast import to every one of us, it has received so little investigation in the past. Even up to the middle of last century our inquiries had led us little further than what I call the subscience of the subject—that is, we distinguished, classified, and named our various bodily inflictions. We also did more: for we had ascertained empirically the physiological and therapeutical effect of many drugs—quinine, opium, mercury, iodide of potassium, ipecacuanha, and others; and also that great genius Jenner had discovered a wonderful fact which is at the basis of the theory of immunity, prevention, and cure. But the causes of disease and their mode of transference still remained hidden. At that epoch, however, and afterwards Pasteur, Koch, Lister, Behring and others created the science of bacteriology. But still, though the information thus obtained was of prime importance to the pathologist, the physician, and the surgeon, we still remained much in the dark regarding one important issue, namely the exact path of transmission of many diseases from man to man. Bacteria are easily saprophytic and may have many paths of transmission, and I fear that we are still very much in doubt as to the most important of these numerous routes. We thought, and are often still inclined to think, that the germs of disease come to us from any place where they may be scattered—that they have not precise routes and points of entry. This leads to a very vague prophylaxis. We undertake all kinds of disinfections in order to destroy the enemy wherever he may possibly lurk; and the consequence is that we often fail to check infection as certainly as we wish. It has been the great result of the inquiries which I will now proceed to describe that they have, as the French say, "precised" our knowledge upon this point in connexion with many diseases, and have indeed led to the discovery of another and most wonderful route of infection which until recently was undreamed of by the profession and the public.

The armies of science, like those of nations, commence with small beginnings and advance in parallel columns. If one column is checked by insuperable difficulties, the others endeavour to outflank the point of resistance; and a victory is often won by this means in science as in war. (Excuse my military similes, which appear to be appropriate at this hour.) That column of science which conquered the domain of bacteriology was brought to a standstill for some time as regards the exact transmission of disease until the parallel column attacking from quite a different direction circumvented the difficulty in this respect.

The Story of the Early Investigations.

The story commences with the studies of those obscure and often despised workers who toiled in the domains of parasitology. Some of the largest parasites were known in antiquity, but the ancients possessed quite a wrong notion of their origin, which they attributed to spontaneous generation—that is, they thought the parasites originate *de novo* in the host. In the seventeenth century, however, Redi proved that this hypothesis does not hold for certain insects; and later Pallas argued that parasites originate *ab ovo*, like other animals—that is, that their eggs escape from one host and enter another host, thus leading directly to the presence of the parasites in the latter. This history possibly still holds for certain parasites; but in 1790 Abildgaard showed by experiments that some parasites of fish live not only in those fish but for a part of their existence in certain water fowl; and this extraordinary law, which may be called after De Barry's term slightly changed, the law of metaxeny, was proved during the middle of last century by Eschricht, Steenstrup and especially Küchenmeister to apply to a large number of Platodes and Cestodes. Subsequently Leuckart, Melnikoff, and others extended the law to cover other species, including species of Nematodes. A most important case was that of the *Filaria medinensis*, the famous guinea worm of man, which was shown by Fedschenko in 1869, following a suggestion of Leuckart, to be in common with man and a water-flea (*Cyclops*). All this constituted a discovery which was both remarkable in that it exhibited the wonderful devices of nature for propagating parasites from host to host, and was also of the highest importance to mankind (though few recognised this point at the time) because it showed us how many of our great diseases are likely to be acquired.

Let me dwell on this point for a moment. Parasites, accustomed as they are to dwell in the safe retreats of certain portions of their host's body, must be exposed to great dangers whenever they come to pass, as they must do, from one individual host to another. Thus if this passage is effected merely by the egg, it is obvious that the eggs must be poured out in immense numbers to compensate for their immense destruction outside the body of the host, while it would always be probable that only a very minute proportion of the eggs would ever find their way again into fresh hosts of the proper species. In order to avoid these difficulties, nature, I presume through an infinite period of evolution, has enabled many parasites to acquire a more safe and certain route of entry—through other animals which are associated frequently with their first species of host. Thus, for instance, a parasite of dogs and cats develops also in the dog-louse, and is therefore not scattered broadcast from the dog and the cat over the surface of the earth, but is retained alive in close proximity to the bodies of those animals. Remember that nature is as solicitous for parasites as for the higher animals which contain them. She thinks no more of man than of the minute germ which infests him. From her open hand fall innumerable species, and she endows them all with equal powers of looking after themselves and their own interests. It is not in the interest of parasites to be wasted abroad. It is in their interest to be brought again as quickly as possible to the host in which evolution has formed them to live—and that is why this wonderful law of metaxeny holds good. It must be remembered, of course, that no species of parasite should be allowed to develop in excessive numbers in the same individual host, because this would result in the death of the latter and therefore also of the former. The parasite must therefore find some means of transference at some stage in its life-history; and that route must be the most expeditious possible. This most expeditious route will often be, as I have said, through another species of animal connected in its habits with the original host.

Later Discoveries.

Following upon the discovery of Fedschenko, Manson in 1877 showed that the embryos of another *Filaria* of man (*Filaria bancrofti*) develop in a species of mosquito, probably a *Culex.* The life-cycle of this parasite, up to the point to which he carried it, was closely similar to that demonstrated by Fedschenko for *Filaria medinensis*; and Manson did not complete the story. Now, however, other important discoveries were made, which showed that animal parasites do not by any means belong only to the zoological groups of the Cestodes, Platodes, and Nematodes, but that many of them are unicellular. Thus Leuckart established the protozoal order of the Sporozoa; Lankester and others discovered Trypanosomes and Hæmogregarines; Davaine discovered Cercomonads, and Lösch discovered the group of parasitic amœbæ. Lastly, in 1880, Laveran made the most important discovery that malaria is associated with a minute protozoal parasite of the blood; and his observations were followed by those of Danilewski and others who showed that similar parasites are to be found in many animals. All this extended the catalogue of animal parasites over a vastly larger field than was known to the ancients; and the morphology and life-history of the parasites in the known hosts were elaborated by numbers of workers, who also succeeded gradually in connecting them with some of the most important diseases which inflict man and animals. Thus it was gradually shown that amœbæ are the cause of one form of dysentery and abscess of the liver; that trypanosomes cause the deadly nagana of domestic animals in Africa, and the equally deadly sleeping sickness of man, besides many other maladies of animals of numbers of species. Ankylostomes were proved to cause miner's anæmia, which also was shown to be prevalent through vast areas of the tropics, by no means only among miners. The Trematodes called *Bilharzia* were shown to produce a terrible form of cystitis in Egypt and elsewhere. *Filaria bancrofti* were proved to produce elephantiasis and a number of other maladies which are very common in the tropics. Simultaneously malaria was seen to be caused by at least three different species of the group discovered by Laveran.

At the same time, of course, as I have said, the habits of all these parasites in the hosts in which they had been found were being minutely examined. But up to the last decade of last century we still could form scarcely any definite idea as to how the protozoal parasites pass from one individual host to another. The law of metaxeny which had been proved to apply to many of the larger parasites had not been extended to the smaller ones. In 1889, however, Smith and Kilborne discovered a small parasite called *Piroplasma*, in the blood of cattle suffering from Texas fever; and more than that showed that in some mysterious way the infection is carried from ox to ox by means of certain cattle-ticks—though they did not demonstrate in any way that these parasites undergo a metaxenous stage of development in the ticks, and indeed failed to find them at all in these arthropods. In 1896 also Bruce made his famous discovery that the Trypanosomes of nagana are conveyed by certain tsetse flies, but supposed that the carriage is a mechanical one. And there the matter rested until the solution of the great malaria problem opened a new field.

MALARIA.

We now turn to the subject of malaria. Economically, as well as medically, it is certainly the most important disease in the tropics, perhaps in the world. It is found almost everywhere in hot climates, and even in most temperate climates during the summer. From statistics we find that as a broad general rule in malarious countries about one-third of the total population suffer from attacks every year, and also that about one-third of the admissions to hospital and attendances at dispensaries are due to malaria. But these figures are merely based upon records and do not cover the enormous additional number of patients who remain untreated. Thus we know that the malaria parasites or malarial enlargement of the spleen can be found in native children in malarious countries to an enormous extent, reaching 100 per cent. in very insalubrious spots. The case mortality is only about 0·5 per cent., but the prevalence of the disease is so extremely great that the total mortality caused by it makes an addition to the general mortality of anything up to 10 per 1000 or even 15 per 1000; and the malady complicates all other diseases in the tropics in a way which renders them more difficult to treat. In India alone it has been officially estimated that the total deaths from malaria average about 1,300,000 a year in ordinary years, and may reach a much higher figure during years of epidemic prevalence. Thus the total bill of annual mortality and sickness which King Malaria presents to the human race is something enormous.

Former Hypotheses regarding Malaria.

Hence the development of the human race, especially in warm countries, has long demanded that we should ascertain exactly how this plague is propagated, and should endeavour to find how best it may be prevented. It is remarkable that even more than 500 years before Christ the ancients certainly were acquainted with one great law—namely, that malaria is connected with stagnant water, such as marshes; and there are good grounds for believing that Empedocles of Sicily actually delivered Selinus from malaria by draining its marshes or by turning two rivers into them. This knowledge seems to have been generally held since ancient times, though it must have been acquired quite empirically; but Varro and Columella, at about the time of the Christian era, actually suggested that the disease is in some way connected with insects which breed in marshes. In more modern times, however, malaria has been ascribed to noxious vapours given off by stagnant collections of water—the hypothesis evidently being that the poison is some kind of chemical one. I have mentioned that in 1880 Laveran discovered that the disease is due to certain protozoal parasites in the blood. When this fact was accepted ten years later, many observers at once rushed to the conclusion that these parasites have an extra-corporeal existence in marsh water, and actually attempted to demonstrate this by producing infection in healthy persons by such water brought from malarious localities. The experiments of Agenore Zeri (1890) are to be particularly mentioned. He gave water from the Pontine marshes persistently to a number of persons orally or in spray or by clyster, but entirely without result. At the same time many thought that the poison may lie, not only in stagnant water, but generally in the soil of warm countries, this being called the hypothesis of the telluric miasma; but of course this was merely a hypothesis which did not rest upon any observations or experiments. Even ten years after Laveran's discovery we were still completely ignorant as to how the malaria parasites enter the body. We might search for them in marshes and soil; but the search was likely to prove extremely difficult, because all water and soil is full of innumerable different organisms, and it would have been no light task to ascertain which of all these are really responsible for the disease among men, especially since Zeri had shown how difficult it was to produce infection by means of water in bulk.

At the same time however, the hypothesis originally but vaguely mooted by Varro and Columella had been gaining ground. Indeed, Lancisi had repeated the same speculation in 1717 and seems actually to have suspected mosquitoes and to have studied them. As late as 1881 several theorists repeated this conception—though, on studying their statements, I think that little value is to be attached to them. In 1883, however, Dr. A. F. A. King wrote a most able paper on the subject, in which he gives no less than 19 reasons why mosquitoes are likely to carry malaria. He thought that the insects bring the poison from the marsh and inoculate it into men. Many of his reasons are good ones, but others are now seen to have been untenable—and, in any case, he gave no experimental evidence. Next year Laveran himself and Robert Koch independently enunciated the same speculation, but gave few reasons and no experiments in support of it. Ten years later, however, Manson repeated the hypothesis, but in a different form. He depended less upon the epidemiological evidence cited by King than upon certain parasitological evidence which occurred to himself. By this time (1894) the parasites of malaria had been very carefully studied, and were shown to possess, not only certain forms which are provided for their propagation in the human host, but also other forms which, when the blood is freshly drawn, emit several so-called flagella. These latter forms had really led Laveran to his discovery, but their zoological significance still remained quite unexplained; and while some writers thought that they had some special significance, others believed them to be merely the result of death *in vitro*. Manson now urged that the flagella given off from these forms are really flagellated spores; that when mosquitoes ingest blood containing these forms the flagellated spores escape in the insect and enter its tissues, where they ripen into some further unknown stage. Then, he thought, the insect dies two or three days later on the surface of the water, and this later stage of the parasites enters the water, and finally rises in the marsh-mist to infect men. Obviously, therefore, Manson's hypothesis was quite different from King's: the former thought that mosquitoes derived the parasite from men and transferred it to the marsh, while King thought just the opposite. Neither really reached the truth: both were half right, but half wrong. One cited parasitological and the other epidemiological evidence; and neither attempted experimental verifications.

The Solution of the Problem.

Nevertheless, all these hypotheses, including those of the telluric miasma, were necessary for the laborious experimental inquiry which was now evidently demanded in the supreme interests of human life and health. I gather from what I have been told that my own work on the subject may prove sufficiently interesting to students to be worthy of mention here. I was first drawn to the malaria problem in the year 1889, when I observed during active service in Burma that the prevalence of malaria did not at all accord with the theory of the telluric and marsh miasma; and my doubts were strengthened during subsequent years by careful thought and study. If the poison is given off in an aerial form, either from water or from soil, the disease ought to be almost uniformly distributed. Such, however, is not the case, and it really occurs principally in very small spots or pockets, generally in close proximity to stagnant water. Thus in one station where I subsequently served my regiment was severely inflicted, while other regiments, scarcely a mile distant, remained almost entirely free. I was therefore very dissatisfied with this hypothesis, and being acutely alive to the great importance of the problem I determined to study it carefully. In 1894 Manson acquainted me with his hypothesis, and I then remembered that Laveran had said the same thing; but I was not aware of King's paper, nor of the remarkable researches on *Piroplasma* by Smith and Kilborne. In 1895 I attacked the work experimentally at Secunderabad in India, and determined first to adopt the mosquito speculation as a working hypothesis, and then to study other hypotheses if it failed—though I was much impressed by the former. The whole history of my work has been fully given in my Nobel Lecture, published in England by the Journal of the Royal Army Medical Corps, 1905; and I need mention here only the salient points.

For more than two years I caused mosquitoes of the genera *Culex* and *Stegomyia* to feed on patients containing malaria "crescents" which were the proper forms for transmission according to Manson. But my failure was complete, and indeed it was impossible to follow what he thought were flagellated spores in the insects' tissues. I then adopted another technique; which was to compare insects of the same species which had been fed on malarial blood with those which had not been so fed, and to see if I could find any particular parasites in the former after they had been kept alive for some days. Many hundreds of insects were studied completely in this manner, and more than a thousand incompletely; but my failure was still complete. I obtained, however, a close practical experience of the insects' tissues, and learnt much about some common parasites which they possess. I also endeavoured to infect healthy persons by means of water in which presumably infected mosquitoes had been allowed to die, as Manson thought that such water would be infected; and, lastly, I worked at a hypothesis of mine, that infected mosquitoes might carry infection by their bites, and Mr. Appia, assistant surgeon of my hospital at Bangalore, kindly submitted to be bitten by many such insects in 1896. The result still remained quite negative. We now know the reason: the species of insect with which I was working were the wrong ones.

In 1907, however, I observed another variety, which I called dappled winged mosquitoes, and which everyone now knows were Anophelines. I first saw these in an intensely malarious quarter near Ootacamund, where I myself acquired malaria during my investigations. A few months later I obtained eight of these insects in Secunderabad, and employed them for my usual experiments. Six of them died or gave bad dissections. On August 20th, 1897, I was so fortunate as to find in the tissues of one of these insects, four days after it had been fed upon a case of malaria, certain bodies which I had never observed in mosquitoes before. These contained the characteristic pigment of the malaria parasite. Next day, the 21st, I found the same bodies in the last mosquito of my batch of eight—only they were now larger and more definite. To those who had not worked at the subject such evidence might appear slight indeed; to me, after years of toil and thought, the evidence was immensely strong. A little later I found the same bodies in two more mosquitoes and knew that I was on the right track: I felt that the two unknown quantities of this complex equation had been simultaneously found—the species of mosquito which carries malaria, and the position which the parasites take in its tissues, namely, the wall of the intestine.

Elucidation of Life-Cycle of Malaria Parasites.

Now, after 17 years, I may perhaps be allowed to mention this point in order to encourage those students who, as I was then, are now toiling after the unknown. But I at least obtained success, not only by labour but also by supreme good fortune; and believe that but for this good fortune on those dates, we should still have remained ignorant of the manner in which malaria is conveyed, and might have remained ignorant of it for the next century. Unfortunately, my work was now interrupted for nearly six months, just at a point when I expected to unravel the whole history of the malaria parasites in a few weeks; and it was not until March of next year that I was able to take up the thread again in Calcutta. For many reasons I was then unable to work at the human parasites, but commenced the study of the malaria parasites of birds, which are closely similar to the former. In a very short time I was able to demonstrate the presence in mosquitoes of pigmented bodies derived from the allied parasites. These bodies were found to grow regularly during one week after the insects had been fed; to reach maturity, and to produce a number of elongated spores. Now came an intensely exciting moment. What happens to these spores? According to Manson's hypothesis, they ought to liberate themselves in the water in which the insects died; but I had now shown that the insects did not die after two or three days as he supposed, but may live for weeks. I attempted to follow the spores in all directions through the insects' tissues, into the lower intestine, and even into the egg. On July 4th, 1898, however, I observed the fact that the spores enter the insects' salivary or poison glands. The full truth was now immediately disclosed, and proved to be far more wonderful than any of us had ever dreamed of. The parasites are not only taken from man by the mosquitoes as Manson had supposed and are not only put into man by the mosquitoes as King had supposed; but both hypotheses are true, and the insect carries the parasites directly from man to man. Here then was merely another case of the great law of metaxeny—which, however, was now proved for the first time to hold good for protozoal parasites. The malaria parasites, like many larger ones, require two hosts for their life-cycle.

These researches mapped out step by step every detail of the transformation, and gave us a much greater logical certainty than could be obtained by isolated infection experiments. Nevertheless, such experiments were attempted immediately, and in July and August I infected 22 out of 28 healthy birds by the means of the bites of infected *Culex*—thus completing the whole story in detail. True, that was done with birds' malaria, and I had only seen the first steps of the process with regard to human malaria; but any zoologist will know that with such closely allied species the life-cycle of one is sure to be almost exactly similar to the life-cycle of the other—as proved to be the case here. My work was now interrupted again, and for nearly a whole year; and it was not until August, 1899, that I was able to show directly that the human parasites have exactly the same development. Meantime, however, Koch and Daniels had confirmed my work on birds' malaria; and certain Italian workers repeated it with regard to the human parasites, even to causing infection in healthy human beings (November, 1898), three months after my similar work with birds.

A very important discovery had been meantime made quite independently by MacCallum and Opie in America (1897) who showed that the bodies which Manson had thought were flagellated spores were really sperms. Thus the large pigmented cells which I had found in mosquitoes at the same date were really fertilised macrogametes. This gave a much more correct zoological interpretation to my phenomena; but did not otherwise disturb the history which I had ascertained.

SUMMARY OF RESULTS IN REGARD TO MALARIA.

This, then, was the result obtained. Let me summarise it briefly. From the time of the Romans we were aware that the malarial fevers are connected with marshes and stagnant water in warm countries. Later, when it was seen that the disease is not confined only to the proximity of marshes, the theorists conceived that there is a telluric poison which causes malaria and is especially abundant in damp places. All this was a very general proposition; and in order to prevent the disease, it was necessary to undertake very extensive drainage. Now, however, the new knowledge obtained enables us to particularise the exact route of infection. We believe no longer that the poison is spread uniformly in the air of warm countries, but know that it is always contained in the minute bodies of certain insects, and, more than that, in the still more minute salivary glands of those creatures. Here, then, science has given us knowledge which can not fail to be of immense practical importance to the world.

The discovery of the full life-cycle of the parasites enables us, not only to "precise" the route of infection, but to determine exactly which species of mosquitoes are concerned. My failures with numerous undetermined species of the genera *Culex* and *Stegomyia* had shown that these are probably innocuous as regards malaria; and my ultimate success with certain Anophelines had shown that these were inculpated. Since then the work of many observers has shown that out of about 500 Culicidæ only about 25 species carry malaria, and that all of these belong to the Anophelines. So that for the prevention of malaria we are not obliged to deal with mosquitoes in general, but only with particular species.

Still further, the knowledge so obtained enables us to study exactly the habits of the culpable species. In fact, I necessarily began such studies during the whole of my researches. The genera *Culex* and *Stegomyia* breed most commonly in artificial collections of water round houses; but I saw as early as 1897 that the dappled-winged mosquitoes (Anophelines) breed principally in different sites, that is, chiefly in natural collections of water, such as marshes, puddles, streamlets, and the edges of lakes, ponds, and rivers. This had been known before in the case of certain species; but I now saw the great epidemiological and sanitary bearing of the phenomenon. The reason why malaria is connected with marshes was now fully established by quite independent work. Humanity had explained the fact by supposing that the poison of malaria itself rises from the marsh; it was now seen that it is not the poison itself that rises from the marsh but the carrier of the poison. The net result was the same—except that we now know not only the source of the poison but the exact method of transference. After all, humanity had reached the truth by empirical observations made during thousands of years; but now science, in confirming these observations, brought them to a fine point of exact theory.

ADVANCES IN OTHER DIRECTIONS.

But these were by no means the only fruits obtained. To return to our military parallel, when a commanding position of the enemy is carried victory extends to a large area round it. The principal function of men of science is not merely to observe, describe, and catalogue phenomena, but, above all, to solve difficult problems; and the solution of one such problem frequently gives us the solution of many more. Such has proved to be true also in this case; for as soon as we had solved the malaria problem we were able to apply the same theorem to a number of other diseases. As already stated, Manson had shown in 1877 that the embryos of *Filaria bancrofti* can live in certain species of *Culex*, but he had not shown how they pass back from these insects to man. Now, however, James and Low, working independently, showed that the embryos enter the insects' proboscis, thus suggesting that they return into the human circulation by a route similar to that which is used by the parasites of malaria—and this work has been well followed up by Bahr and many others.

Another discovery, concerned with one of the most important of human diseases—namely, yellow fever, was made by Reed, Carroll, Lazear, and Agramonte during the last days of last century. Without knowing the causative agent of that disease, they yet showed by direct experiments on human beings that the infection is carried directly from man to man by another species of mosquito, *Stegomyia fasciata* or *calopus*. It had long been stated by epidemiologists that malaria differs from yellow fever in that the former is connected with damp and decaying vegetation and the latter with insanitary conditions round houses. The former hypothesis was verified by the observation that Anophelines breed in terrestrial waters, and the latter was now explained by the fact that Stegomyia breed in artificial collections of water round houses. A little later Graham gave strong evidence in favour of the theory that dengue fever is carried by a species of *Culex*. Thus mosquitoes have now been incriminated as the carrying agents of no less than four important diseases of man. But this is by no means all. I have mentioned that Bruce incriminated *Glossina morsitans* as the carrying agent of nagana; and he and others now showed that the deadly sleeping sickness of Africa is carried by other tsetse flies. Various Spirochætes, especially that of tick fever, have been shown to be conveyed by ticks. A peculiar type of comparatively mild fever, of which the cause, like that of yellow fever, is still unknown, has been proved to be conveyed by sand flies. Several diseases of animals have been proved to possess a similar history; and others, both of animals and men, are suspected to lie in the same category. Perhaps, however, the most important and dramatic result was that obtained in the case of plague—the most terrible of epidemic diseases, the wonder and the despair of humanity since the beginnings of history, the scourge which was so often attributed to the direct action of God. It is caused really by the rat-flea. And this discovery signals another advance, because plague is, as we all know, due not to an animal but to a vegetable parasite; and we therefore see that bacteria also may adopt precise routes of entry. A similar case is that of Mediterranean fever, which is carried principally by the milk of infected goats; and leprosy (another supposed scourge of Heaven) has been attributed to the bites of bed-bugs; while some are even beginning to think that measles is due to fleas.

CONCLUDING REMARKS.

Gentlemen, I have now completed my task. We have seen at least another instance of how strongly recent advances in science bear upon medicine—how they confirm facts previously guessed at, achieve victories formerly undreamed of, and establish great theorems which will be of value to humanity as long as civilisation exists. But they affect not only the theory and the treatment of disease, but, what is perhaps still more important, its prevention; and it is especially in this line that the new theorems affect us. A whole great epidemiological group of diseases has been separated out—the so-called insect-borne diseases—and they are perhaps on the whole the most important, at least in the tropics. But, more than that, these discoveries give us practical methods of prevention, which may be summed up in two words—No vermin. We now have a great sanitary ideal put before us—so to manage our habitations, villages, towns, and cities that the vermin in them shall be reduced to the lowest possible figure. Scores of entomologists and medical men are now dealing exactly with the habits of these creatures and showing us how to effect the required object. It demands only intelligence, energy, and organisation on the part of administrators. Unfortunately these qualities are not always forthcoming, and administration often lags years behind the dictates of science. Although 15 years have elapsed since many of the facts which I have described were discovered, I think that I may say after constant study of the subject and with all due consideration that mankind has hitherto not effected more than about one-tenth of the improvement of health which it might have effected already if it had put its heart into the business. When I had completed my work in 1899 I had fondly dreamed that a few years would see the almost complete banishment of malaria from the principal towns and cities in the tropics—that those benign climates and those beautiful scenes would be almost rid at once of a scourge which had blighted them from time immemorial. In this I have been disappointed. True, much has been done in certain places, as in Panama, Ismailia, Italy, West Africa, and parts of India and the Malay States, and in some other spots; but much more might have been done had we remained fully alive to our opportunities—and our duties. It is not the fault of science that we do not fully utilise the gifts which she gives to us. None of us here will live to see the full fruition of these gifts in this particular case; but we have at least seen the beginning and may believe that our children will reap the profit.

But it is ever thus with science. Her slaves are like labourers condemned to drive tunnels through mountains—working, perhaps for years, in darkness and oppressed by the immense spissitudes of nature above them, but always encouraged by the hope that at any moment they may emerge into the sunlight and upon the vision of a new world. May I conclude, as appropriate to the subject of this address, with four lines which were written years ago by one who was then toiling at the researches here described and in the darkness of the most utter failure—at work, moreover, for which he had little liking or ambition. They may encourage others who are now in a like case. Writing generally of the sublime spirit of inquiry he said:—

Thee most we honour, thee
  Great Science. Hold thy way.
The end thou canst not see;
  But in the end, the day.

CENTRAL MIDWIVES BOARD.—A special meeting of the Central Midwives Board was held at Caxton House, Westminster, on Oct. 22nd, Sir Francis H. Champneys being in the chair. A number of midwives were struck off the roll, the following charges amongst others having been brought forward. The patient suffering from attacks of faintness, from rupture of the perineum, and the placenta and membranes not having been expelled within two hours of the confinement, the midwife did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 19. The midwife being unable to make use of a clinical thermometer or to take the pulse of her patients, consequently cannot comply with Rule E. 13. Neglect to employ the antiseptic precautions required by Rules E. 3 and 7, to wash the patient as required by Rule E. 7, and neglect to take the pulse or temperature of the patient as required by Rule E. 13. Discontinuing attendance at a time when the patient was ill and suffering. Not being scrupulously clean in person, clothing, house, and appliances as required by Rule E. 1; not keeping the register of cases as required by Rule E. 23. Medical aid having been sought for the patient, the midwife neglected to send any notification thereof to the local supervising authority, as required by Rule E. 21 (1) (a).

THE WOUNDED IN THE WAR: SOME SURGICAL LESSONS.

BY D'ARCY POWER, M.B. OXON., F.R.C.S. ENG.,
SURGEON TO ST. BARTHOLOMEW'S HOSPITAL; LIEUTENANT-COLONEL R.A.M.C. (T.F.), ATTACHED TO THE 1ST LONDON GENERAL HOSPITAL.

IT is still too early to generalise upon the surgical methods needed by those wounded in the present war. It may, however, prove useful to present a few of the results which have been observed in a base hospital in London. As might have been expected, the final results of wounds were seen before the earlier ones, because at first the injured remained in the stationary hospitals until they were well enough to travel. Now that these hospitals are full, and the fighting is often nearer England than the Allies' bases, the type of wound is becoming more serious. Taking the cases in this reverse order, then, we learnt at first that bullets, and even pieces of shrapnel casing, often passed through fleshy parts without doing much damage. The points of entry and of exit were clearly seen. Both had healed satisfactorily, and nothing remained to be done except to feed and nurse the patient for a few days before he was discharged into a convalescent home. In other cases the wounds of entry and exit were suppurating, but the track which must have existed between the two was soundly healed. No sinus remained, and so far it has not been necessary to lay open any such track. It seems clear, therefore, that the most frequent sources of infection are the skin of the patient or some subsequent contamination. It is certainly not due to the clothing, for in several cases pieces of shirt or puttee were removed from wounds which had healed soundly and which had been reopened on account of the pain they had caused. The positions of the wounds of entrance and exit showed in many cases that the path taken by the projectile had been extraordinarily devious, and that the deviation was not accounted for by the presence of any more resistant structure such as bone.

Cases with Foreign Bodies in situ.

The wounds which were still open when the patient reached England were all submitted to radiographic examination on the assumption that the foreign body causing them was *in situ*, and in the majority of cases this was found to be correct. It was soon learnt, however, that there was a vast difference between the location of the projectile and its removal. The radiograph showed its presence, but it was often extremely difficult and might be impossible to find it. The patient, therefore, was told that the wound would be explored, not that the projectile would be extracted. The difficulty lies in the fact that the patients are strong muscular men, and that the shadow only gives an approximate idea of the position and depth of the projectile. It is of the utmost importance therefore that the apparatus as well as the X ray operator should be of first-rate quality. Very little constitutional disturbance was produced, even when the projectile had been in position for three or four weeks, and there was none of the tracking or burrowing of suppurating sinuses which might have been expected. Pieces of the clothing, either in shreds or torn into filaments, were found distally in nearly every case. They had to be looked for, as they were often separated by a bridge of healthy tissue. In some cases where the skiagram showed that the bullet had been extensively comminuted and numerous fragments were distributed widely in the tissues it was thought better to leave them untouched if they were not causing any trouble. In like manner no extensive operations were undertaken to remove foreign bodies from the chest. By the time the patients arrived in England the wounds had healed—apparently without suppuration. When one side of the chest contained fluid it was treated as an empyema by drawing off the blood-stained serous exudation, a portion of rib being removed and drainage employed if the temperature rose or the pleural cavity refilled. It was noticed that most of the operations undertaken for the removal of bullets suppurated for a few days but never dangerously. The operations were performed with the usual precautions and were nursed in the wards by fully trained hospital nurses, so that the suppuration was not attributable to any failure of surgical or nursing technique. It was soon considered advisable, therefore, to isolate patients requiring such "clean" operations as removal of torn internal semilunar cartilages and after this precaution these cases uniformly did well. Amputations at this period were rare and there were no deaths.

Severer Cases.—"Nerve Concussion."

The cases have become more severe as the battles were fought nearer England. Gangrene due to an anaerobic organism has occurred in several cases. Early operation has been performed with success, and the very great value of a free application of a 2½ to 3 per cent. solution of iodine in rectified spirit has been determined. It should be applied to the raw surface of the flaps at the time of amputation, and care should be taken to allow of free drainage by not putting in too many sutures. A few cases of tetanus with a long incubation period have occurred, but the majority of the patients affected with this terrible disease have not come under our care, as they have been treated at the stationary hospitals.

It is almost a matter of common knowledge that the size of the skin wound bears no relation to the severity of the injury. The lower jaw in one case was found to be so comminuted that it had to be removed with a Volkmann's spoon, yet the skin wound hardly admitted a probe, and the patient merely said that he thought his jaw was broken in two places. It is necessary, therefore, to make a detailed examination in every case—under an anæsthetic when possible, and with the necessary preparation for an immediate and adequate operation.

The war, too, has revealed an interesting series of cases which for the present must be called "nerve concussion," about the treatment and prognosis of which much has still to be learnt. When they occur in connexion with the spinal cord they may be the result of a blow from a bullet or piece of shell perhaps no nearer than upon the pack which the soldier is carrying. There is no external wound, but the patient becomes paraplegic. Such a condition is analogous to "railway spine," though it is not associated with neurasthenia at least in the early stages which have come under observation at the present time. A similar condition of paralysis without any gross injury has been noticed in the arms and legs apparently due to interference with the function of one or more nerve trunks, since exposure of the nerve does not show that it has been anatomically damaged. It is too soon yet to state whether recovery of function is the rule or the exception in these cases.

The mental state of the patient makes no difference to the rate of recovery. The English soldier, who is naturally sanguine, heals quickly in spite of suppuration; the Belgian is not far behind, though he is a prey to anxiety, because he grieves for his country, has lost sight of his relatives, and is in hospital in a foreign though friendly land. Like a brave fellow he bears himself in sickness as he does in health with magnificent courage.

Surgical Methods.

The net result of the work appears to show that as in ordinary civil practice meddlesome surgery is generally bad surgery. Wounds need no longer be probed, drained, and packed. Tempered with discretion, it is better to wait than to operate unless the patient is losing ground. Considerable experience, however, is required to decide when to wait and when to operate, because injuries which appear slight superficially may conceal conditions that demand immediate treatment. Looking to the fact that the chief infection seems to come from the patient's own skin, there can be no doubt that antiseptic surgery is preferable to aseptic methods. Dry dressings must give place to compresses and fomentations wherever possible. Iodine applications seem to be more effective than the solutions of perchloride and biniodide of mercury which have been hitherto the more generally used. The youth and health of the patients render the prognosis even of severe injuries correspondingly good and enable the surgeon to take waiting risks which might otherwise be thought hazardous. It is better, therefore, to err on the conservative rather than on the radical side of surgery; at any rate, in the earlier stages.

Chandos-street, W.

THE INTRATRACHEAL ADMINISTRATION OF CHLOROFORM.

By W. DAKIN MART, B.A. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,
ANÆSTHETIST TO THE NOSE, EAR, AND THROAT DEPARTMENT, ROYAL INFIRMARY, SHEFFIELD.

ONE hears nowadays a great deal concerning the intratracheal administration of ether and very little concerning the intratracheal administration of chloroform. I have of late administered chloroform by this method in operations on the nose and throat performed by Mr. W. S. Kerr, honorary surgeon to the Nose, Ear, and Throat Department of the Royal Infirmary, Sheffield, who has expressed his satisfaction with the method.

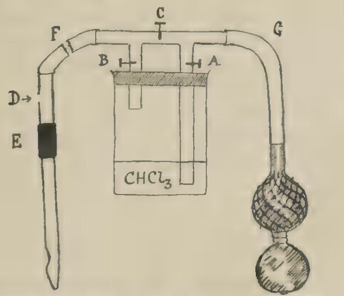

Diagram of apparatus for intratracheal administration of chloroform. A, B, C, Taps. D, Extra opening in catheter. E, Metal collar. F, Long rubber tube (represented broken) to catheter. G, Rubber tube from Junker bellows.

The apparatus used differs from a Junker's inhaler in that there is a cross tube connecting the entry and exit tubes. Each of these tubes carries a tap, A, B, and C (see diagram). When A and B are open and C is closed it acts as an ordinary Junker's inhaler. When A and B are closed and C is open air alone is pumped into the lungs—in fact, "artificial respiration" can be performed. To this so modified apparatus a catheter is attached, which carries the chloroform vapour to the trachea. The catheter I have used is a gum elastic No. 12, but differs in two respects from an ordinary catheter. 1. There is an additional opening, D, of the same size as the eye, which opening is situated in such a position that when the catheter has been properly introduced it is outside the patient's mouth, and through which the patient can breathe. 2. Surrounding the catheter is a thin metal tube, E, which is situated in such a position that the patient's teeth are prevented from injuring the catheter. The length of this tube is about 1½ inches.

Method of administration.—The patient is first of all anæsthetised by chloroform sprinkled on a mask in the ordinary way; then before he is quite fully under the influence of the anæsthetic the upper part of the larynx is swabbed with 10 per cent. cocaine, and when quite under the catheter is introduced into the larynx by means of a bronchoscope and attached to the rubber tube connecting with the modified Junker inhaler. The introduction of the catheter into the larynx is rather liable to give rise to coughing unless the patient is fully under the influence of the anæsthetic. The middle finger of the left hand is then placed over the opening in the catheter, which is, as I have mentioned above, situated just outside the patient's lips, and then the right hand compresses the Junker bellows three times. The finger is then removed from the catheter opening, through which the patient is now allowed to take two or three breaths. If the patient has partially come round the chloroform vapour so pumped into the lungs is liable to excite coughing, which, however, ceases on the removal of the finger from the catheter opening and when two or three breaths have been taken by the patient. Then again cover up the opening and try two compressions and again remove the finger letting the patient breathe once, and so on, suitably varying the amount of chloroform and air until the patient is completely anæsthetised. This being accomplished, the assistant places a sponge, to which is attached a silk thread, at the back of the throat around the catheter. This, while preventing the entry of blood into the larynx, is not packed so tightly as to maintain a dangerous pressure in the lungs. One is unable to do this in intratracheal administration of ether, and as a consequence blood has a tendency to enter the larynx in operations on the nose and throat—not only has a tendency, but actually does do so, for when administering ether by the intratracheal method I have found blood in the eye of the catheter in a case where all possibility of traumatism was excluded.

During the continuation of the anæsthetic I usually compress the Junker bellows not more than four times in succession and then allow two or three breaths of air through the catheter opening, the number of breaths allowed depending naturally upon the degree of narcosis to which the patient has attained. I have found nothing to indicate that the pressure obtained in the lungs by four compressions of the Junker bellows is other than a safe one.

When the operation is nearly at an end I frequently cut out the chloroform vapour altogether by closing taps A and B and opening tap C (see diagram), and then on compressing the bellows and closing the catheter opening air is pumped into the lungs. In one case in which this was done, and in which the operation had lasted one hour, the patient was quite rational half an hour afterwards. I think this fact of being able to pump air into the lungs should be very valuable in those cases where there is a sudden cessation of respiration due to excess of chloroform, but of this I am fortunately unable to speak from experience.

I have been told that the intratracheal administration of chloroform is dangerous, but so far I have not found it so, the anæsthesia being very light and the control of the patient good—in fact, it is difficult to get the patient deeply under, and unless the throat is plugged round the catheter, as described above, the tendency is for the patient to show signs of returning consciousness. Should the operation be one in which there is no danger of blood entering the lungs, then it is not really necessary to have an external opening in the catheter, as there is sufficient space around the catheter for respiration.

The advantages of the method are: 1. The simplicity of the apparatus. 2. The easy portability. 3. The prevention of blood entering the lungs. 4. The fact of being able to give artificial respiration with the same apparatus. 5. Less hæmorrhage takes place than is the case when ether is given in operations about the nose and throat.

Now it has been maintained by some that the use of adrenalin in conjunction with chloroform is liable to lead to grave results; the fact that I have experienced none such may be taken as an additional indication of the safety of the method.

The following are cases in which the method has been used:—

1.	Male	aged	50.	Right Denker's operation.
2.	Male	,,	23.	Double Coldwell Lac operation and exploration of sphenoidal sinus.
3.	Female	,,	17.	Canfield Ballenger's operation.
4.	Male	,,	36.	Septal spur removal, intranasal antral operation.
5.	Female	,,	17.	Tumour of upper jaw (osteo-fibroma).
6.	Male	,,	18.	Removal of outer walls of inferior meatuses.
7.	Male	,,	24.	Submucous resection and exploration of antrum.
8.	Male	,,	20.	Submucous resection and Canfield Ballenger's operation.
9.	Male	,,	51.	Canfield Ballenger's operation.
10.	Male	,,	34.	Canfield Ballenger's operation.
11.	Male	,,	45.	Canfield Ballenger's operation.
12.	Male	,,	23.	Submucous resection.
13.	Male	,,	25.	Canfield Ballenger's operation.
14.	Male	,,	19.	Œsophagoscopy.
15.	Male	,,	21.	Double maxillary sinus operation and nasal polypi.
16.	Male	,,	65.	Pharyngectomy. Post mortem, lungs normal.

Case 14 was of interest in that the patient was an imbecile. He had an enlarged tongue, also swelling of the arytenoids, interarytenoid region, false cords, and the lower part of the pharynx. He was anæsthetised first of all by chloroform sprinkled on a mask. When the œsophagoscope was introduced it was found that such marked obstruction to respiration was caused that the operator was forced to desist. The intratracheal catheter was then introduced and anæsthesia proceeded with by the above-described method. The œsophagoscopy was now continued without the slightest trouble, the patient breathing quite easily through the catheter. Mr. Kerr, the operating surgeon, considered that the œsophagoscopy would have been impossible unless this method of anæsthesia had been adopted.

Case 16 was one of carcinoma, death taking place about a week after the operation. At the necropsy the lungs did not show any signs of damage due to excessive pressure.

In preparing this paper my thanks are due to Mr. Kerr for much help and suggestion; to Mr. Stevenson, house surgeon to the Nose, Ear, and Throat Department; and to the Medical Supply Association for making all the apparatus used.

Sheffield.

ETHER ANÆSTHESIA BY THE INTRATRACHEAL METHOD: A REPORT ON 49 CASES.

BY RUPERT LLEWELLYN JONES, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE HOUSE SURGEON TO THE BRISTOL GENERAL HOSPITAL.

IN November, 1913, Dr. F. E. Shipway, of Guy's Hospital, visited Bristol and gave a demonstration of positive pressure ether anæsthesia in the theatre of the General Hospital. The subjects, by his kind permission, form Nos. 1 and 49 of our series.

The Apparatus.

The apparatus used by Dr. Shipway was that which he describes in the first number of the *British Journal of Surgery*. The expense of this outfit for a method of anæsthesia which is as yet barely past the experimental stage and which is not designed for universal application, made it necessary for us to improvise a cheap and simple plant which we could use until we were satisfied that more elaborate apparatus was justified. The air was delivered to the ether chamber of our apparatus through rubber tubing by a simple force-pump driven by an electric motor. The ether chamber was arranged on the surface-evaporation principle, no bubbling through being provided for. By means of a two-way tap the amount of air deflected into the ether chamber could be varied from "none" to 100 per cent. This ether chamber held about a pint of ether and the evaporating surface had a diameter of 5 inches. From this chamber the mixture was carried to the warming chamber and passed through a lead spiral. A T-piece of glass tubing was interposed between the warming chamber and the patient. The stem of the T led nearly to the bottom of a column of water 8 inches long; so that when the pressure in the patient's lungs reached 8 inches of water, air bubbled from the stem of the T-piece and a safety-valve action was set up. As a stand-by in case the force pump failed, we used a large foot bellows and rubber bag reservoir. To intubate the larynx we used gum-elastic catheters with straight extremities, stiffened by the incorporation of a stilette. They were introduced by the direct vision method by means of Hill's instrument.

Technique.

All the patients above 18 years of age had, one hour before the operation, a subcutaneous injection of hyoscine hydrobromide, gr. 1/100; morphine sulphate, gr. 1/6; and atropine sulphate, gr. 1/100. Some of our first cases had the area of the larynx painted with a 5 per cent. solution of cocaine, but we early discontinued the practice as a routine procedure, for we found that a reasonable depth of anæsthesia at the time of the intubation was the main factor in controlling the subsequent spasm of the glottis. When the patient was sufficiently anæsthetised by the inhalation method the anæsthetist opened the mouth with a gag introduced from the left side. The operator standing on the right side of the patient introduced the laryngoscope and lamp. The gag was then withdrawn, as the widely opened mouth tended to push backwards the base of the tongue, rendering the rima glottidis unnecessarily inaccessible. On obtaining a clear view the operator introduced the catheter and withdrew the laryngoscope and stilette. Glottic spasm and coughing usually followed the catheterisation of the larynx. To prevent the patient's biting the catheter a wooden prop resembling a cotton reel was slipped along the catheter until it lay between the teeth. The pump was then started and the rubber tube from the apparatus connected to the catheter. The patient usually passed fairly rapidly into the typical condition of quiet anæsthesia. At the finish of the operation the ether chamber was cut out and the patient supplied with pure air until a brisk corneal reflex was present. The catheter was then removed and natural respiration followed.

The main points which exercised us at different times were: 1. Our force pump was very noisy and delivered its air in a series of puffs. 2. A few cases could not be sufficiently deeply anæsthetised (Nos. 27 and 31), probably owing to the small size of the ether chamber and rubber tubing of too narrow a bore. 3. The water valve was very sensitive and was ideal so long as the respirations were quiet, but was apt to bubble and splash when coughing occurred. 4. The catheterisation of the larynx by the direct method is a manœuvre requiring practice and a definite amount of dexterity, so that in our cases the surgeon was nearly always responsible for its successful conduct. This, of course, made for delay in the commencement of the operation. When anæsthetised the appearance was, as Shipway says, that of a person asleep. The colour was practically always good—often better than when the patient took his place upon the table. The respirations were light and regular, the pulse good, and the corneal reflex absent or just present. The regularity of the supply of anæsthetic allowed of a lighter degree of anæsthesia than with the inhalation methods. The experiments of Janeway and Ewing would suggest that a method of anæsthesia which reduces the respiratory excursions to a minimum would be of value in reducing shock.

Review of the Cases.

Our early attempts at catheterising the larynx were prolonged and the results of slight trauma were sometimes apparent. Our inquiries regarding sore throat were sometimes answered in the affirmative and pain on swallowing complained of. In Case 8 one of the lateral incisors of the upper jaw was knocked out and the lower lip lacerated. This was the only case where a definite lesion was inflicted.

The question of subsequent pulmonary trouble claimed our attention. Our first case, upon which Dr. Shipway demonstrated, suffered from a severe tracheitis and coughed up quantities of stringy mucus. The fact that the method is not a guarantee against pneumonia is suggested by Case 7, in which death occurred, owing to this complication, a week after the operation. On the other hand, Case 36 had definite signs of pleurisy at the right base, which were not aggravated by the anæsthetic and which disappeared in the course of an uneventful convalescence. Two others had slight coughs after their operations, but there was no rise of temperature. We found that the ease—or the reverse—with which the catheter could be passed into the larynx differed very greatly in individuals. The thick-necked type of patient offered considerable difficulty, so also did cases of goitre, whilst any infiltration of the base of the tongue, as in epithelioma, was also an obstacle. In operations on the mouth, throat, and nose the method compares favourably with the inhalation method, the necessity for hurry, with its associated bustle, being eliminated.

All the following cases, with the exception of Cases 16 and 49, were under the care of Mr. Hey Groves, who designed the apparatus used, and to whom I am indebted for permission to publish this paper. My thanks are due to Dr. Poole Lansdown and Mr. J. Lacy Firth for permission to report their cases.

Brief Notes of the 49 Cases.

CASE 1.—A male aged 30. Chronic empyema with left cord paralysis. Hyoscine. 5 per cent. cocaine to larynx. Intubation of larynx was successful at the first attempt. The patient breathed badly; there were coughing and dyspnœa. He had dyspnœa afterwards and orthopnœa. Ten days after operation he discharged himself unrelieved, and died two weeks later. At the necropsy enlarged mediastinal glands were found, apparently sarcomatous.

CASE 2.—A male aged 30. Sinus of thigh. Hyoscine. No cocaine. Catheterisation was effected after repeated attempts. Anæsthesia was satisfactory. The patient complained of stiffness of the throat next day, which passed off.

CASE 3.—A male aged 21. Inguinal hernia. Hyoscine. No cocaine. Catheterisation was effected at the fourth attempt. Anæsthesia was typical and satisfactory. There was transient soreness of the throat next day.

CASE 4.—A male aged 12. Tonsils and adenoids. No hyoscine. No cocaine. Catheter was easily introduced at first attempt. Anæsthesia was quiet and moderately deep. The tonsils were dissected piecemeal to the accompaniment of free hæmorrhage. Convalescence was uneventful.

CASE 5.—A female aged 67. Gall-stones. Hyoscine. No cocaine. This patient was of the thick-necked type and attempts to introduce a catheter with Hill's speculum failed repeatedly. Catheterisation was ultimately effected by the digital method. Anæsthesia was typical. Transient sore throat was present next day.

CASE 6.—A female aged 17. Goitre. No exophthalmos or tachycardia. Hyoscine. No cocaine. Prolonged and repeated attempts at catheterisation failed and the operation was finished under anæsthesia by the inhalation method.

CASE 7.—A male aged 52. Epithelioma of tongue. There was a large and foul ulcer. Hyoscine and cocaine were given. The operation, including removal of the glands, took 70 minutes. The catheter was passed without difficulty. Typical quiet anæsthesia. Four days after the operation the patient developed signs of pneumonia at the right base and died a week after his operation.

CASE 8.—A male aged 15. Suppuration in an appendix wound with signs of ileus. No hyoscine or cocaine. Catheterisation took five minutes. Typical anæsthesia. An upper incisor was knocked out and the lip lacerated during the process of catheterisation. The patient made a good recovery.

CASE 9.—A male aged 43. Double inguinal hernia. Hyoscine given. No cocaine. Introduction took eight minutes. Anæsthesia was continued with the foot bellows, which were found to be inadequate. During the preparation of the motor the catheter slipped out and the operation was finished by the inhalation method.

CASE 10.—A male aged 21. Sinus of thigh. Hyoscine. No cocaine. Introduction took two minutes. Anæsthesia was light but sufficient. No subsequent sore throat was noticed.

CASE 11.—A male aged 28. Tuberculous pyopneumothorax. Hyoscine and cocaine. Introduction took two minutes. The patient remained a good colour but coughed frequently throughout the operation. Sinuses explored and found to lead into the mediastinum. No subsequent sore throat. The cough did not appear aggravated.

CASE 12.—A male aged 48. Hydrocele. Chronic bronchitis. Hyoscine and cocaine. Catheter introduced at first attempt. Colour remained excellent throughout the operation. The cough was not aggravated.

CASE 13.—A male aged 27. Hæmorrhoids. Hyoscine and cocaine. Catheter introduced easily. The patient did not resent stretching of the sphincter. No subsequent cough or sore throat.

CASE 14.—A male aged 52. Enlarged prostate. Hyoscine and cocaine. Catheter introduced at first attempt. Immediately afterwards the pulse became weak but improved again. Suprapubic prostatectomy was performed. Anæsthesia was light, quiet, and adequate. No subsequent sore throat or cough.

CASE 15.—A male aged 13. Osteomyelitis of foot. No hyoscine. Cocaine. Intubated at second attempt—there was considerable laryngeal spasm. A reflex was present at the commencement of the operation, but quickly disappeared. No sore throat was noticed afterwards.

CASE 16.—A male aged 55. Epithelioma of tongue. (Mr. J. L. Firth's case.) Intubation was tried repeatedly for 30 minutes, but unsuccessfully owing to infiltration of the base of the tongue. Œdema of the uvula supervened during the operation, which was performed under chloroform administered through a laryngotomy opening. The patient died suddenly 28 hours later from heart failure.

CASE 17.—A female aged 18. Duodenal ulcer. Hyoscine and cocaine. Intubation was effected at the first attempt. The anæsthesia was uneventful; the patient remained a good colour and breathed quietly. Convalescence was uneventful.

CASE 18.—A male aged 48. Exostosis of femur. Hyoscine and cocaine. Intubation without difficulty. Anæsthesia typical and uneventful. No subsequent trouble.

CASE 19.—A male aged 50. Recurrent paroxysmal vesical pains with frequency of micturition, for which no cause could be found. Hyoscine. No cocaine. Intubation successful at first attempt. Typical anæsthesia. The spinal cord was exposed and a number of posterior nerve roots divided. No subsequent sore throat.

CASE 20.—A male aged 36. Hernia. Hyoscine. No cocaine. The patient was of the thick-necked type and intubation took 10 minutes. Typical quiet anæsthesia. No sore throat or cough subsequently.

CASE 21.—A male aged 56. Exploration of suprapubic wound. Hyoscine. No cocaine. Intubation easily effected. Typical uneventful anæsthesia. No subsequent trouble.

CASE 22.—A male aged 50. Cerebellar tumour. Decompression operation. Intubation took five minutes. The patient was then turned on his face and anæsthetic was continued for 20 minutes very successfully. The catheter then fell out and inhalation was resorted to. There was a little cough at night afterwards, which passed away quickly.

CASE 23.—A female aged 45. Hæmorrhoids. Hyoscine. No cocaine. Intubation took five minutes. Typical quiet anæsthesia. No reflex on dilating sphincter. No unpleasant after-effects.

CASE 24.—A female aged 34. Hysterical contractures of legs. Hyoscine. No cocaine. Intubation took five minutes. Quiet anæsthesia. No subsequent sore throat. This patient during a previous anæsthetic with a chloroform mixture had caused some anxiety as regards her pulse and respirations.

CASE 25.—A male aged 23. Hernia. Hyoscine. Catheter introduced easily. Typical anæsthesia. This patient said that his throat was a little sore after the operation, but "not to trouble him."

CASE 26.—A female aged 29. Gastric ulcer. Hyoscine and cocaine. Intubation easily effected. Light but adequate anæsthesia. Gastro-enterostomy was performed. Convalescence uneventful.

CASE 27.—A male aged 47. Duodenal ulcer. Hyoscine. No cocaine. Intubation successful at second attempt.

Sufficiently deep anæsthesia could not be obtained; a brisk reflex following any attempt to proceed with the operation. The inhalation method was resorted to. On recovering from the anæsthetic the patient had a slight cough which he had not noticed before.

CASE 28.—A male aged 52. Catheterisation. Hyoscine. No cocaine. Intubated at first attempt. Typical anæsthesia. No sore throat.

CASE 29.—A male aged 39. Hernia. Hyoscine. No cocaine. Intubation took eight minutes; the patient was thick-necked. Adequate anæsthesia. He said that his throat was sore after the operation; there was some pain on swallowing.

CASE 30.—A male aged 26. Hernia. Hyoscine. No cocaine. Catheter was introduced at first attempt. Typical anæsthesia. There was a little soreness of the throat. Two days after the operation a loose cough developed which got slowly better.

CASE 31.—A male aged 40. Stricture. Perineal section. This patient had neither hyoscine nor cocaine. The introduction of the catheter took seven minutes. The anæsthesia was not good; there was a brisk reflex which could not be diminished, and it was necessary to resort to the inhalation method before the operation could be proceeded with. There was no subsequent sore throat or cough.

CASE 32.—A female aged 45. Laparotomy. Hyoscine. No cocaine. Intubation was effected at the first attempt. Typical anæsthesia throughout the operation. No after-effects.

CASE 33.—A male aged 15. Appendix abscess. No hyoscine. No cocaine. Intubation successful at first attempt. Typical uneventful anæsthesia. The patient vomited for 36 hours.

CASE 34.—A female aged 33. Femoral hernia. Hyoscine. No cocaine. Larynx was intubated at first attempt. Typical anæsthesia without after-effects.

CASE 35.—A male aged 46. Gastric ulcer. Hyoscine. No cocaine. Catheter introduced without difficulty. The patient soon passed into a condition of quiet typical anæsthesia. No subsequent sore throat or cough.

CASE 36.—A female aged 38. Appendix abscess. This patient had signs of involvement of the base of the right lung in the shape of dulness and diminution of the breath sounds. The respirations were increased to 27–30. The temperature was normal. Hyoscine was given but no cocaine. Larynx was catheterised without delay. Typical quiet anæsthesia was soon obtained. There was a troublesome cough at night after the operation, but it slowly got better.

CASE 37.—A male aged 21. Ventral hernia in appendix scar. Hyoscine. No cocaine. Larynx was easily catheterised. This was the one case in the series where it was found necessary to diminish the supply of ether owing to the depth of anæsthesia induced.

CASE 38.—A male aged 28. Sciatica. Hyoscine. No cocaine. Catheter easily introduced with the patient on his side. The anæsthetic was continued with the patient lying on his face. The sciatic nerve was exposed, stretched, and injected with novocaine. There was a brisk reflex at first, and a tendency to resent the manipulations was present throughout the operation.

CASE 39.—A male aged 54. Fractured humerus—amputation. Hyoscine. No cocaine. Intubation successful at first attempt. Typical anæsthesia. No cough or sore throat.

CASE 40.—A female aged 36. Double inguinal hernia. Hyoscine. No cocaine. Catheterisation of larynx took ten minutes and was successful at the third attempt. The patient then passed rapidly into the typical condition of anæsthesia. There was no subsequent sore throat.

CASE 41.—A male aged 35. Perforated duodenal ulcer. No hyoscine. No cocaine. Larynx catheterised at first attempt. Typical quiet anæsthesia, whilst ulcer was sewn over. Uneventful convalescence.

CASE 42.—A female aged 21. Cerebellar tumour, preliminary decompression. Hyoscine. No cocaine. Larynx was catheterised without difficulty and the patient was turned on her face, in which position the anæsthetic proceeded quietly. There was severe hæmorrhage from the scalp and the patient became pulseless. On turning the patient over at the end of the operation there was no sign of life, and the usual treatment failed to resuscitate her.

CASE 43.—A male aged 35. Hernia and varicocele. Hyoscine. No cocaine. Larynx was catheterised with ease. Typical quiet anæsthesia. No after-effects.

CASE 44.—A male aged 5 weeks. Hare-lip and cleft palate. No hyoscine. No cocaine. Great difficulty was experienced in introducing a narrow black rubber catheter into the larynx. The ordinary method was quite unsuccessful, but after several attempts the larynx was catheterised through a small urethral speculum. A glass funnel was attached to the end of the catheter, and gauze on which was dropped chloroform, placed inside; but the patient could not be kept anæsthetised and we had to resort to Junker's inhaler. The hare-lip was repaired. There was no cough subsequently.

CASE 45.—A female aged 31. Appendicitis. Hyoscine. No cocaine. Catheterisation of larynx effected at first attempt. Typical anæsthesia. No subsequent cough or sore throat.

CASE 46.—A female aged 24. Tuberculous knee. Arthrectomy and wiring, medullary peg. Hyoscine. No cocaine. Catheterisation of larynx presented no difficulty. This patient passed into a condition of deep anæsthesia and was pale, but otherwise gave no trouble. There were no after-effects.

CASE 47.—A female aged 19. Necrosis of jaw. Hyoscine. No cocaine. Intubation at second attempt. Quiet anæsthesia whilst manipulations inside the mouth were in progress. No after-effects.

CASE 48.—A male aged 37. Tuberculous sinus of back. Hyoscine. No cocaine. Larynx catheterised at first attempt. Typical anæsthesia. No after-effects.

CASE 49.—A male aged 58. Hernia and hydrocele (Mr. Lansdown's case). Hyoscine and cocaine. Anæsthetic conducted by Dr. Shipway. Catheterisation was easily effected. Typical quiet anæsthesia. No after-effects.

St. Austell, Cornwall.

ACCESSORY SPLEEN CAUSING ACUTE ATTACKS OF ABDOMINAL PAIN.

BY R. C. ALEXANDER, M.B., CH.B. EDIN.,
F.R.C.S. EDIN.,
TUTOR IN CLINICAL SURGERY, ROYAL INFIRMARY, EDINBURGH
ASSISTANT TO THE PROFESSOR OF SURGERY, UNIVERSITY
OF EDINBURGH;
AND
ARCHIBALD ROMANES, M.A., M.B., CH.B. EDIN.,
LATE HOUSE SURGEON, ROYAL INFIRMARY, EDINBURGH.

THE frequency with which the pathologist meets with accessory spleens at necropsies makes it rather remarkable that their presence is rarely noted by the operating surgeon. Adami and Nicolls[1] state that they are found at 11 per cent. of all necropsies and that they may reach the size of a walnut. Shennan[2] states that they are "frequently found." Their situation varies. They may lie in the gastro-hepatic or gastro-colic omenta, or even in the stomach wall itself. On consulting various standard text-books on surgery we have found their occurrence noted once only,[3] and that merely as an anatomical fact, and not because their presence had any pathological significance. Rocher[4] states that he has frequently at operations observed the occurrence of accessory spleens, especially in young subjects. On examination of bodies in the post-mortem room he found that those seen in the infant were in many

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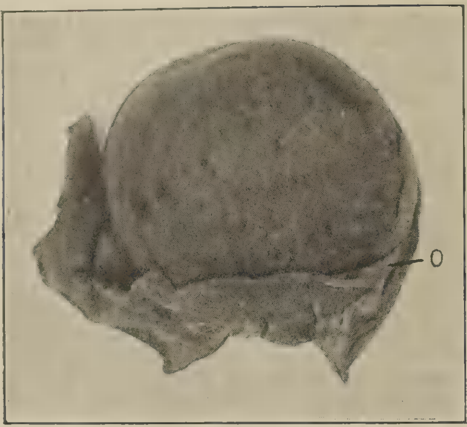
[1] Adami and Nicolls: Systemic Pathology, 1910.
[2] Shennan: Post-mortems and Morbid Anatomy, 1912.
[3] Moynihan: Keen's Surgery, 1906.
[4] Rocher: Journal de Médecine de Bordeaux, vol. xxxiii., 1903

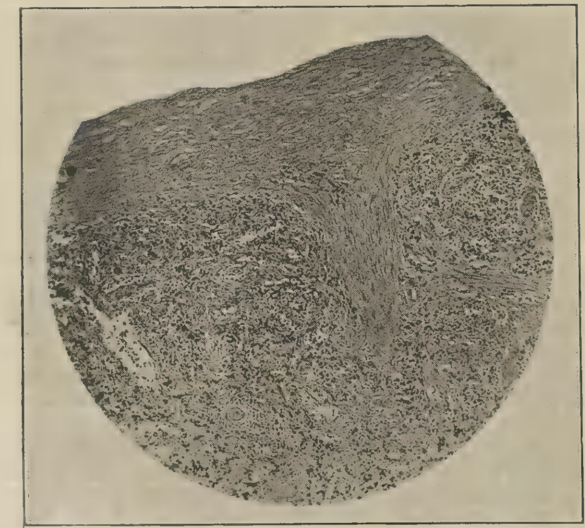
cases undergoing atrophy, and that the splenic tissue was difficult to recognise. These were less red than the others, almost yellow, and "of a faded appearance." On the contrary, those of a red colour showed the normal structure of the spleen. From the diminished frequency of their occurrence in the adult he thinks these accessory organs show a tendency to disappear with age. Two, four, or seven of these organs were most commonly met with in each case, but Orth records 400 in one instance. Their situation Rocher has noted post mortem "at the hilum of the spleen, in the gastro-splenic omentum, in the pancreatico-splenic ligament, and in the great omentum." They may be sessile or pedunculated, and in the latter case several smaller ones are often found in the pedicle of a larger one—"disposition en chapelet." Their shape is spherical, oval, or pyriform. This author ascribes their distribution to their development in the dorsal mesentery, and especially that segment from which the stomach and pancreas are formed. He appears to regard them as portions of the normal organ which have been separated during development.

FIG. 1.



From a photograph of the accessory spleen with omentum (O) reflected. Natural size.

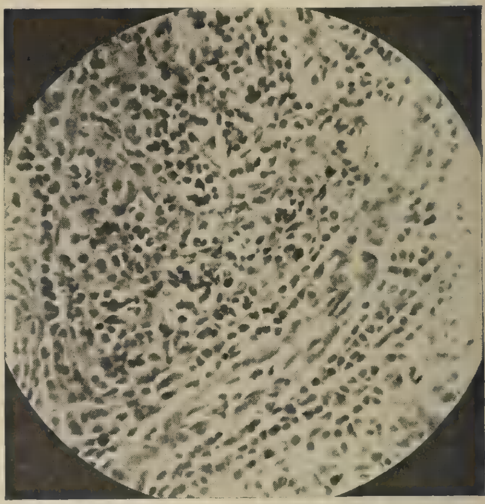
FIG. 2.



From a photomicrograph of the accessory spleen; low power.

Albrecht, of Vienna, quoted by Osler and Macrae,[5] reports a case in which "an enormous number of supernumerary spleens was found; in the usual situation was a normal spleen the size of a walnut with the splenic artery and vein in their normal position. The other spleens were scattered not only in the mesogastrium, but also on the peritoneum—as, for example, on the hepatic ligament and on the convexity of the liver; the largest number was found on the mesentery and transverse mesocolon; there were more than 30 in Douglas's pouch. Each of these spleens was enclosed in a separate capsule covered by peritoneum and exhibited the gross microscopic structure of splenic tissue." Warthin suggests that this is not simply a congenital condition, but rather a compensatory process of accessory spleen development secondary to a congenitally deficient primary spleen or to acquired disease of the spleen. This view seems to us to be borne out by the statement of W. J. Mayo[6] that accessory spleens are found in the pedicle during splenectomy for tumours, &c.

FIG. 3.



From a photomicrograph of the accessory spleen; high power.

The fact of a patient who presented a very definite set of symptoms produced by an accessory spleen coming before our notice induced us to search for other published cases, and we were able to trace but one similar case. We summarise both these cases.

In the case which we ourselves observed the patient was a young woman aged 25, who three years previously had had her right kidney removed for calculous pyonephrosis. A year previously to her admission to hospital she was suffering from an attack of tonsillitis, and while her medical attendant was treating her for that condition she complained of abdominal pain. One of us (R. C. A.) who saw her at that time discovered a mass about the size of a golf ball in the left upper quadrant of the abdomen. This mass could be freely moved about all over the upper abdomen and was somewhat tender to touch. The only other clinical facts of note were a greatly enlarged left kidney, possibly a compensatory hypertrophy, and a considerable degree of albuminuria. A few days later another examination was made, and this time the lump could not be felt until the patient had sat up in bed, when it was easily palpated. She was sent to the surgeon who had previously removed her kidney, but owing to her general health being below par he was unwilling to operate. She returned home and improved in general health, but was subject to frequent attacks of pain of a dragging nature in the upper abdomen, this pain having no relation to the taking of food. The pain was usually rendered worse when the patient stooped, and was unaccompanied by other symptoms. These attacks of pain occurred almost daily, coming on suddenly, lasting for one or two hours, then passing off and leaving her quite well.

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[5] Osler and Macrae: System of Medicine, 1908.
[6] W. J. Mayo: Surgery, Gynecology, and Obstetrics, March, 1913.

In August, 1912, the patient was admitted to the Royal Infirmary, Edinburgh, under the care of Mr. J. W. Dowden. The lump remained about the same size as formerly, and otherwise, with the exception of the enlargement of the left kidney, nothing abnormal was detected on examination. The spleen was normal in size. Her general health was good, and the amount of albumin in the urine very small. The tentative diagnosis of mesenteric or omental cyst was made, and as the patient said that the pain was exceedingly severe when it occurred and that it was making her miserable, Mr. Dowden decided to explore the abdomen. Under a general anæsthetic an incision was made through the upper part of the left rectus muscle. The viscera appeared normal, and no trace of any tumour could be found till the hand was passed up under the diaphragm on the left side and a rounded mass was felt. This was easily delivered at the wound, and proved to be an accessory spleen about the size of a small tangerine orange situated at the lowest part of the great omentum. There were several large vessels running towards it. The omentum was ligatured and the splenculus, which was entirely surrounded by omentum, was removed. The stump of the omentum was carefully stitched to prevent adhesions forming and the abdomen closed. No other accessory spleens were seen. Convalescence was uninterrupted and the patient had no recurrence of symptoms.

On examination the specimen was a perfect sphere (Fig. 1), and on section it presented a homogeneous appearance. Microscopically its structure resembled that of the spleen, except that the lymphoid follicles were not so well developed and that there was considerable fibrosis of the whole organ with recent and old hæmorrhages (Figs. 2 and 3).

We regard the cause of the pain to have been congestion of the viscus from torsion of the omentum obstructing the return blood flow. There was no necrosis visible and there had been apparently no arterial obstruction.

A similar case has been recorded by Témoin (Hôtel-Dieu, Bourges).[7]

The patient was a woman aged 35 years. There was no previous history of illness except that since the age of 20 she had suffered greatly during her menstrual periods. At the first of these painful periods she thought she felt a swelling in her abdomen associated with some abdominal pain. Three years ago she experienced a renewal of this abdominal pain, and discovered just above the umbilicus almost in the middle line a swelling of the size of a large nut. Since that time she had a suffered from constant pain and impaired digestion, with vomiting of stomach contents and bile. During the past year she had consulted several medical men on account of progressive loss of flesh. She came to Dr. Témoin, who discovered a firm tumour, painless on light palpation, situated in the middle line of the abdomen a little above the umbilicus, and of the size of a Tangerine orange. The tumour was slightly movable. Nothing was done at this time, but five months after the patient returned in worse health than before. She had had attacks like intestinal obstruction, and the tumour had if anything slightly enlarged. The surgeon adhered to his former diagnosis of intestinal tumour and proposed a laparotomy.

Under chloroform an incision was made in the middle line and the abdomen was opened. The tumour was discovered lying beneath the omentum, which was attached to the surface of the tumour. The adhesions seemed firm, but were easily separated, as they consisted only of a few vessels. The tumour came into view with its surface lying closely against a loop of intestine. It seemed to be merely pressed against the gut and not to form part of the wall. With blunt dissection the surgeon was able to isolate the tumour, and soon found it attached only by a few small vessels running to the margin of the mesentery. The tumour was removed, the abdomen closed, and the patient made a rapid recovery. Three months after the operation she was very well with perfect digestion and no pain.

The tumour was of the size of a Tangerine orange, and on section appeared like a healthy spleen. Histology: Pulp in small amount; trabeculæ very thick, containing many calcareous particles; some sclerosis of the organ.

In reporting this case Témoin states that he has failed to find a similar one recorded. He was uncertain at first whether it was a movable spleen, but the symptoms did not correspond, and in all the cases he found recorded the movable spleens were hypertrophied. He therefore decided that it was an accessory organ which by its weight or by pressure had caused the digestive disturbances.

For our own part we are inclined to believe that, as in the first case, a species of volvulus of the organ took place. This resulted in some interference with the mesenteric circulation and in the kinking of the loop of gut to which the splenculus was attached, giving rise to recurrent attacks of pain and vomiting resembling intestinal obstruction.

We are indebted to Mr. Dowden for permission to publish his case, and to Dr. Disney Cran who during a residence in Paris transcribed for us the French references unobtainable in this country.

Edinburgh.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

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NOTES OF A CASE OF ACIDOSIS FOLLOWING CLINICAL DIPHTHERIA.

By H. W. HARDING, M.D. LOND., D.P.H.,
ASSISTANT MEDICAL OFFICER OF HEALTH, GREAT YARMOUTH.

THE patient, a female aged 4 years, was received into the Great Yarmouth Isolation Hospital on Oct. 25th, 1912, suffering from clinical diphtheria.

Previous history: Measles only; no attacks of vomiting. On admission: Pallid face, tonsils swollen, the left covered with a large patch of membrane; tongue thickly furred; left submaxillary glands very much enlarged; pulse 120, small; temperature 97·6° F. She received 4000 units of antidiphtheritic serum. Swabs showed presence of Hoffmann's bacillus; Klebs-Löffler bacillus not seen. Oct. 26th: Thick nasal discharge. Nov. 1st: Albuminuria lasting 11 days. 6th: Nasal voice; no regurgitation. 16th: Voice normal; palate moves. 26th: Vomited undigested food. Dec. 3rd: Vomited after liquorice powder; colour good. 4th: Quite well; allowed to get up. 7th: Vomited watery fluid after breakfast; pallid; heart normal; vomited curdled milk at 12, and again after water at 2 P.M. Complained of thirst and headache. 8th: Vomited six times during morning; after that retained water; enema given with constipated result; tongue clean; heart *nil;* knee-jerks present; no albumin. 9th: Vomited 16 times during the day; no abdominal distension or retraction; pulse fair and colour good. Vomit had acid odour, both it and the urine giving the colour reaction with ferric chloride. Enemata of sodium bicarbonate half-drachm doses given every three hours. 10th:

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[7] Témoin: Archives Provinciales de Chirurgie, Paris, vol. vii., 1898.

No vomiting during the night; enemata given six-hourly; child grew drowsy during latter part of day. 11th: Vomited again at 10 A.M. Takes well of sodium bicarbonate in water. Is fretful. 12th: Vomited once this morning. Still on enemata every six hours, as well as orange juice and sodium bicarbonate by mouth. Put on bovril. 13th: Vomited twice this morning; very torpid; sodium bicarbonate increased; one drachm four-hourly by rectum. whilst the bread-and-butter and milk-pudding was sprinkled with it; making about 1½ oz. in the 24 hours. Vomited once on the 14th and on the 15th; after that date no further nausea, child taking food well and got quite bright mentally. 18th: Enemata omitted, but sodium bicarbonate still added to food. 19th: Sodium bicarbonate reduced to half an ounce in 24 hours. 20th: Very little colour with ferric chloride. 21st: Urine gives no colour with ferric chloride and patient put on fish diet. 28th: Swab gave Hoffmann's bacillus. Jan. 6th: Ready for discharge.

Fortunately the odour of the vomit was marked, or else the sickness might have been thought to be of vagal origin. The torpid condition of the child was not, however, that associated with the latter, and appeared rather a characteristic symptom; it improved rapidly with the increased doses of sodium bicarbonate; this latter was reduced as soon as effervescence was given with ferric chloride and the urine.

Great Yarmouth.

NOTES OF A CASE OF EXTENSIVE SURGICAL EMPHYSEMA.

BY E. NORMAN BUTLER, M.R.C.S. ENG., L.R.C.P. LOND.

A CASE of surgical emphysema presenting features that seem worth recording recently came under my notice.

The patient, an Indian, was injured in a railway accident wherein a portion of a train fell over an embankment some 40 feet high, and was found lying with a heavy baulk of timber across his chest. The accident occurred about 9.30 P.M. I first saw him at about 12.30 A.M., when owing to the difficulty of the circumstances and the numbers of others injured, an exhaustive examination was not possible. He then showed enormous swelling of the face, neck, and trunk generally, the crepitus of surgical emphysema being everywhere obtainable. There being no obvious immediate treatment called for, I left him in order that I might attend to others whose injuries were more amenable to first aid, and I cannot say if the limbs were at that time involved.

He was next seen some six hours after, when the injured had been conveyed to hospital, and I noticed that while awaiting his turn to be carried into the hospital he was unconcernedly smoking a cigarette. He showed little respiratory distress and talked intelligently. By this time the emphysema involved the whole trunk, the neck, face, whole of the scalp, the arms as far as the wrists, and the legs to just below the knees. Pain was complained of on pressure over the lower ribs of the left side, though no actual fracture of ribs could be made out owing to the condition of the subcutaneous tissues. There was no external wound. Dr. Lucius Nichols, who kindly assisted me to deal with the injured, expressed his opinion that further entry of air into the tissues might be prevented if an attempt was made to close the entry to the pleuræ, but while preparations were being made to do this the patient suddenly exhibited most extreme dyspnœa and the pulse became impalpable, and he died in two or three minutes from the outset of these symptoms.

At the post-mortem examination the seventh rib on the left side was found to be fractured and a fragment of bone had penetrated the lung for a distance of one or one and a half inches. The lung showed no sign of collapse, nor was there any pneumothorax.

The points of interest exhibited by this case are, I think: (1) The great extent of the surgical emphysema; (2) the rapidity of its spread; and (3) the fact that death was seemingly due to sudden syncope rather than asphyxia, as evidenced by the comparative absence of dyspnœa until within a few moments of death.

Magadi Junction, British East Africa.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Operative Treatment of Tumours of the Cæcum and Colon.

A MEETING of this society was held on Oct. 26th, Sir J. BLAND-SUTTON, the President, being in the chair. A discussion was held on the Operative Treatment of Tumours of the Cæcum and Colon, especially in relation to immediate resection, colostomy combined with secondary resection, and short circuiting.

Mr. H. J. WARING opened the discussion from the point of view of malignant disease of the cæcum. He said that malignant disease of the cæcum in the majority of cases was a columnar-celled carcinoma, usually of the exuberant type, forming a mass protruding into the lumen of the cæcum, or less commonly an annular ring of new growth, scirrhous in character, and tending at a comparatively early stage to give rise to obstruction in the intestinal canal. Generally the exuberant type of growth commenced in the region of the ileocæcal valve, whilst the annular type was more common where the cæcum passed into the ascending colon. Occasionally, however, a constricting growth might be met with on the proximal side of the ileocæcal valve, in which case it would be found to commence in the mucous membrane of the most distal part of the ileum and to involve the cæcum by direct extension. A small proportion of neoplasms of the cæcum were sarcomata, and these usually commenced in the wall of the cæcum beyond the ileocæcal valve. He exhibited specimens of these different forms of growth. Included with the cæcum was, he supposed, the vermiform process. True carcinoma of this process in his experience was extremely rare. Some years ago he investigated 600 consecutive cases of disease of the vermiform process, and no single case was definitely shown to be true carcinoma. In the museum of St. Bartholomew's Hospital there were two specimens which had been called carcinoma. They, however, histologically presented more the characteristics of endotheliomata. They were removed from patients aged 27 and 29 respectively. The two specimens were exhibited, and in addition a microscopical preparation of a similar condition. When compared with carcinoma in other parts of the body, carcinoma of the cæcum (and other portions of the colon) was, on the whole, he thought, less malignant, the rate of growth of the neoplasm being slower, infection of lymph vessels and glands later, whilst visceral secondary growths only appeared when the affection had existed for a considerable period. This diminished malignancy was especially the case when the neoplasm was of the adeno-carcinomatous type and extended into the lumen of the bowel as a cauliflower-like protuberance. Sarcoma, on the contrary, appeared to be quite as malignant as when occurring in other parts. Concerning frequency he found that during the years 1909–13 107 cases of malignant disease of the large intestine (excluding the rectum) were admitted into the surgical wards of St. Bartholomew's Hospital, and of these 17 were examples of carcinoma of the cæcum. No case of sarcoma of the cæcum was met with during this period nor of carcinoma of the vermiform process. As regards treatment, cases of malignant disease of the cæcum could conveniently be considered under the following groups:—

1. *Cases in which the patient's general physical condition was good, there were no marked signs of intestinal toxæmia or anæmia denoting toxic poisoning from disintegration of the growth, absence of intestinal obstruction, whilst the tumour in the cæcal region was movable.*—This was the most favourable class of case, but unfortunately few patients presented themselves for treatment at this stage, or if they did, refused operative help. The operation which in his opinion was to be recommended was resection of the growth, together with the adjacent portions of the ileum and colon and also the lymph vessels and glands receiving vessels from the diseased area, followed by lateral anastomosis of the ileum and colon. When the anastomosis had been completed and the cut ends of the ileum and colon inverted, the two blind ends should be fixed to the parietal peritoneum of a portion of the external wound, so that if any leakage took place it might do so externally and not into the peritoneal cavity. A small drain should be passed down to the region of the fixed inverted ends for this purpose. If no leakage took place it could be removed after a few days, whilst if leakage did occur it would at once become manifest and a portion of the external wound could be opened up so as to facilitate the exit of any material which might pass from the intestine. Occasionally sloughing of a portion of the inverted ends occurred, in which case extension of a septic process to the peritoneum would be avoided. He had just received a letter from a hospital patient upon whom this operation had been done in 1910; he stated that he was still quite well, could walk eight miles a day, and do his work as a carpenter.

2. *Cases with acute intestinal obstruction, presenting signs of intestinal toxæmia, and with a mass in the right iliac fossa diagnosed as a diseased cæcum.*—When a patient had definite signs of intestinal obstruction and consequent intestinal toxæmia the plan of treatment which was most likely to be followed by a successful result was immediate enterostomy, and when the obstruction and toxæmia had been combated resection and anastomosis. The parietal incision should be made in the right iliac fossa and the portion of ileum above the cæcum fixed in the wound and drained. Often it would be found of considerable advantage in these cases to bring the cæcum, portions of colon and ileum and adjacent mesentery with contained lymph glands out through the external wound and to fix the mass there as a "protrusion," the ileum being drained as already mentioned. At the expiration of a few days the entire mass might be cut off, leaving two enterostomy openings. At a later date the spur between the two openings could be destroyed with an enterotribe, and the external opening closed. This method of treatment was most applicable in patients whose general physical condition was not good and in whom there was considerable doubt that they would survive a severe excision and anastomosis operation. In those cases in which a simple enterostomy was performed, after the patient had recovered from the intestinal toxæmia and the general condition had improved, a resection and lateral anastomosis in the manner already mentioned should be carried out.

3. *Cases in which the mass connected with the cæcum was attached either to the floor of the right iliac fossa or to the adjacent portion of the abdominal wall, on which account excision was considered inadvisable; and signs of acute intestinal obstruction were absent.*—In this group of cases in his opinion the best method of treatment was ileo-colostomy, the artificial communication or anastomosis being made between a coil of the ileum, a little above the ileocæcal valve, and the transverse colon, at its most dependent portion. This, of course, was a palliative operation, but often patients lived a considerable time in comparative comfort. He had notes of cases where life had been prolonged in this manner for 18 months and two years.

4. *Cases of acute intestinal obstruction due to malignant disease of the cæcum, but in which it was not possible to localise the site of the disease owing to abdominal distension.*—A median exploratory incision should be made in these cases, and the further treatment determined according to the pathological conditions discovered. Usually it was safest to perform first an enterostomy and establish drainage. When the patient had recovered from the toxæmia due to the obstruction and the general condition had improved, the further treatment could be carried out. Thus, if the cæcal tumour was found to be operable, resection and lateral anastomosis could be performed, and at a later date the enterostomy opening closed, whilst in inoperable cases ileo-colostomy should be done, the enterostomy opening being made use of in establishing the communication with the transverse colon.

It occasionally happened that a diagnosis of carcinoma of the cæcum was made, and on operation the pathological condition was found to be either actinomycosis or tuberculosis in the ileocæcal region. He showed a specimen obtained from a patient in whom he had made the diagnosis of carcinoma of the cæcum and on exposure of the hard mass in the right iliac fossa found it to be actinomycosis. The patient was treated by large doses of potassium iodide, and at the end of 12 weeks had apparently recovered. Eight years afterwards the patient again came under his observation and then had an extensive inoperable carcinoma of the stomach from which he died. Post mortem, nearly all traces of the extensive mass in the right iliac fossa had disappeared, the only remains being a few adhesions and obliteration of the proximal portion of the vermiform process.

Mr. JAMES SHERREN said that the divisions of the large intestine with which he had to deal had received various names. These until recent years depended upon its relations to the pelvis—the descending colon being that part outside the limits of the false pelvis, the sigmoid that attached to the wall of the false pelvis, and the rectum that below the level of the pelvic brim. The descending colon still terminated at the iliac crest, but the sigmoid had been anatomically separated into two, one part—the iliac colon—being attached to the iliac fossa without a mesentery, the other—the pelvic colon—forming a loop completely surrounded by peritoneum and attached by its mesentery to the side wall of the pelvis. Its lower limit had been altered, and it now terminated where the complete peritoneal investment of the gut ceased—usually about the third piece of the sacrum. Anatomical divisions were often unsuited for surgical purposes. As an example, he indicated the duodenum with its three or in some classifications four anatomical portions, best divided for surgical purposes into two parts, supra- and infra-ampullary. For the purposes of surgery the iliac should be included with the descending colon, for both portions were as a rule bare of peritoneum posteriorly, features which had an important bearing on operative procedures. He would therefore divide his remarks into (1) the treatment of tumours of the pelvic colon, and (2) of those of the descending, including the iliac, colon. The pelvic colon was the most common site in the large intestine for the development of carcinoma, the descending colon the rarest. Thus among 376 cases of carcinoma of the colon treated at the London Hospital during the ten years 1901–11, 211 were of the pelvic colon, 20 of the descending colon. Among 68 cases which had been under his care, in 36 the growth was situated in the pelvic colon, in five in the descending colon. The problem of the surgical treatment was complicated on account of the rarity with which the diagnosis was made before the onset of urgent symptoms of intestinal obstruction. Attacks of pain, diffuse, or in some cases localised in the right iliac fossa and leading to the diagnosis of chronic appendicitis, were, however, very rarely absent. In one of the cases in which he operated for acute obstruction the appendix had been removed a few weeks previously on account of pain in the right iliac fossa thought to be of appendicular origin. Among the London Hospital cases over 40 per cent. were operated on for acute obstruction. In 24 of his own cases the operation had to be carried out for the relief of obstruction. In the cases with urgent obstruction free drainage of the distended intestine was indicated. At the same time, if the condition of the patient admitted, a careful examination should be made of the growth, glands, surrounding peritoneum, and liver to decide the question of attempting excision at a later date. Primary resection should *never* be carried out in the face of urgent obstruction. If in any doubt it was wiser to drain temporarily before attempting a resection. The seat of drainage and its relation to the operability of the tumour must be considered. In the discussion on malignant disease of the large intestine at the International Medical Congress of last year Bastianelli and others were strongly in favour of a preliminary cæcostomy.[1]

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[1] THE LANCET, August 16th, 1913, p. 480.

Unless compelled by disaster to the cæcum, present or impending rupture or gangrene, he considered it an unwise procedure. It necessitated, in cases suitable for removal, a three-stage operation. In the inoperable cases the discomfort of an artificial anus in the cæcal region was undoubtedly greater than that of one in the transverse colon or left iliac regions. Among his series cæcostomy was necessary in three; in only one was he able to do an excision followed in 14 days by closure of the cæcostomy. Operation in which the growth was exteriorised and removed at the original operation (Paul), or after an interval (Mikulicz), leaving the closure of limbs to a later stage, he did not favour. It was applicable only for growths in a movable pelvic colon, and even here removal of sufficient bowel with its lymphatic supply was difficult, if not impossible. Closure of the artificial anus was tedious and might require several efforts. In cases of intestinal obstruction in which carcinoma of the sigmoid was diagnosed or suspected as the cause he opened the abdomen by an incision through the middle of the lower part of the left rectus muscle. After establishing the presence of a growth and its operability, the condition of the intestine above, and especially the cæcum, was investigated. If the condition of the latter was good he made an artificial anus a few inches above the growth. If operable he excised it ten days or a fortnight later, together with the carcinoma and its lymphatic area, and re-established the continuity of the intestine. If care were taken to have the bowel well emptied and the skin cleansed in the "old-fashioned" way and compressed with 1 in 20 carbolic for half an hour before operation the risk of infection was slight. With large intestine completely covered by peritoneum, end-to-end anastomosis by suture had proved perfectly satisfactory in his hands. It was wise, however, to pass a tube down to its site for a few days, as with the most careful suturing, and even in the absence of any tension, some temporary leakage might ensue. When the growth was involving the upper part of the pelvic colon the anastomosis might have to be made to the iliac colon, and in this case and every case in which the peritoneal covering of the gut was incomplete, lateral anastomosis should be the method adopted. When the carcinoma affected the lowest part of the pelvic colon, anastomosis by invagination, as described by Lockhart Mummery in 1908 and by Balfour from Mayo's clinic in 1910 was the most satisfactory procedure. He had carried out two-stage operations on these lines in 8 cases with 1 death. This was due to acute intestinal obstruction, the result of a coil of small intestine becoming adherent to a bare area of peritoneum on the outer side of the anastomosis. This acted as a band under which another coil became strangulated. The patient was at that time apparently well, three weeks after the operation. In the first two cases of acute intestinal obstruction due to carcinoma of the pelvic colon that came under his care he carried out primary excision; both died. He had not used this method since. The after-history of the 7 survivors was as follows: 1 was alive and well 4½ years after operation; 1 died from recurrence in 4 years, after being in perfect health for 3½ years; 1 died from recurrence in 28 months, after 2 years of health; 1 after 2 years of health showed signs of recurrence; 1 died from recurrence in 19 months, remaining well for 15 months; 1 from recurrence at 9 months; and 1 from recurrence at 7 months. Inguinal colostomy in inoperable cases rendered life more tolerable. In some cases the quality of life remaining was good, and was certainly prolonged in comfort. Colostomy was carried out in 20 cases of carcinoma of the pelvic colon, the left iliac operation in all except two. The remainder were complicated by general diffusion or abscess, rendering any operative relief impossible. Six died within a few days of the operation. He had been able to trace the following: 1 alive and well 6 years after; others at 12, 10, 5 months; the remainder died—1 at 2 years, 1 at 12 months, 2 at 10, 2 at 9, and another at 4 months after operation. He had operated upon 5 cases of carcinoma of the descending colon, in only one of which was acute obstruction present. The operation to be carried out in the presence of obstruction, the result of growth in this situation, would depend on the condition of the intestine above. Where this was obviously acute, transverse colostomy should be carried out. This necessitated a three-stage operation in the event of the tumour being removable. In cases of chronic obstruction lateral anastomosis of the transverse colon to colon well below the growth was the wiser course. This he carried out in two cases in which the tumour was too far advanced for excision. One was alive and apparently well nearly three years afterwards, the other lived for three months. In two cases six and two months ago he successfully carried out primary resection, restoring continuity by lateral anastomosis. His present practice in the treatment of carcinoma of the pelvic and descending colon might be summed up shortly: in all cases of acute obstruction, no matter if the tumour be easily removable, colostomy should be carried out—left iliac if the growth be in the pelvic colon, transverse if in the descending colon. In resection the lymphatic area draining the affected gut should be removed, continuity established by end-to-end suture if the gut had a complete peritoneal covering, by lateral anastomosis if incomplete, sufficient room being obtained by mobilisation.

Mr. E. M. **CORNER**, speaking of tumours of the transverse colon, said that no surgeon had an extensive experience of them on account of their relative infrequency, and because in the great majority of instances the surgeon was operating to relieve intestinal obstruction primarily, and found the carcinoma secondarily. Their relative importance was shown in the figures of the incidence of carcinomata in different parts of the abdominal colon—i.e., exclusive of the rectum. The figures had been gleaned from the records of St. Thomas's Hospital as contained in the St. Thomas's Hospital Reports for 1900–1911 inclusive: Carcinoma of the cæcum, 20 per cent.; carcinoma of the ascending colon, 10 per cent.; carcinoma of the hepatic flexure of the colon, 4 per cent.; carcinoma of the transverse colon, 18 per cent.; carcinoma of the splenic flexure of the colon, 2 per cent.; carcinoma of the descending colon, 6 per cent.; and carcinoma of iliac and pelvic colon, 40 per cent. Carcinomata of the colon were most frequent in the iliac and pelvic colon, then in the cæcum, and then in the transverse colon. In all other situations they were relatively infrequent. Carcinoma was more frequent where the "foodstuffs" remained and paused in their passage through the intestine than where they were in motion. Its incidence was more common in the colon on the right (hepatic) side than in the colon on the left—i.e., more common where the bowel contents travelled against gravity, and therefore more slowly than where they moved assisted by gravity. Of these carcinomata some remained quiet and produced no symptoms or signs until they were very far advanced. Others caused intestinal obstruction quite early in their course. In consequence, carcinomata in the various regions of the alimentary canal possessed various relationships to the clinical symptoms which might arise, such as acute intestinal obstruction. In other words, carcinomata in the different regions of the colon showed different pathological and clinical characters. In his most interesting address at Aberdeen their President, Sir John Bland-Sutton, said that surgeons tended to be of two kinds—technicians or craftsmen who improve the art of their profession, and biologists who improve the science of their profession.[2] It might be added that the value of the work of both had to be brought before and estimated by the clinicians. Hence he would suggest that the greatest and most important group of surgeons was the clinical, as they had to appraise the work of all other departments. To appraise the value of the pathological knowledge of the incidence of carcinomata of the large intestine obtained, as above, from the pathologist, an inquiry was made as to their relative importance in causing acute intestinal obstruction. The incidence of obstruction was as follows: Carcinomata of the cæcum, 4·1 per cent.; carcinomata of the ascending colon, 0·7 per cent.; carcinomata of the hepatic flexure of the colon, 2·5 per cent.; carcinomata of the transverse colon, 13·4 per cent.; carcinomata of the splenic flexure of the colon, 17·4 per cent.; carcinomata of the descending colon, 5·1 per cent.; and carcinomata of the iliac and pelvic colon, 59·8 per cent. These figures showed that: 1. Carcinomata of the cæcum, and still more carcinomata of the ascending colon, did not seem to obstruct the intestinal flow. The growths tended to be lateral and local in the gut wall, like carcinomata of the rectum; hence they did not obstruct the flow within the bowel as did a ring growth. 2. Carcinomata of the iliac and pelvic colon, splenic flexure, and transverse colon were quite different in their clinical behaviour, causing intestinal

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[2] THE LANCET, August 1st, 1914, p. 293.

obstruction early in their course. 3. Carcinomata of the splenic flexure were infrequent, but practically always caused intestinal obstruction. Carcinomata of the hepatic flexure showed the same feature to a much less marked degree. Since many regarded the whole of the large intestine as an anatomical unity it might be as well to include amongst the carcinomata those of the rectum in the statistics showing the relative importance of the carcinomata of the large intestine in causing acute intestinal obstruction. Including these the figures were: Carcinoma of the cæcum, 3·3 per cent.; carcinoma of the ascending colon, 0·2 per cent.; carcinoma of the hepatic flexure of the colon, 1·7 per cent.; carcinoma of the transverse colon, 11 per cent.; carcinoma of the splenic flexure of the colon, 14·3 per cent.; carcinoma of the descending colon, 4 per cent.; carcinoma of the iliac and pelvic colon, 47 per cent.; and carcinoma of the rectum, 18·5 per cent. It would be seen that the asymmetrical and "lumpy," as contrasted with the symmetrical and annular, carcinomata of the right-sided segment of the colon were the least liable to cause acute intestinal obstruction. This clinical condition increased in frequency when the growth was in the transverse colon, at the splenic flexure, to reach its maximum clinical incidence in the iliac and pelvic colon, where it took the form of a ring-like band (from the disposition of the lymphatics) constricting the bowel. In the rectum, again, the growth was "lumpy" and asymmetrical in its disposition. It would be seen that, looked at from all points of view, carcinomata of the transverse colon occupied both pathologically and, to a less degree, clinically an intermediate position between cæcal and sigmoid carcinomata; whilst in cases of acute intestinal obstruction where the situation of the cause could not be ascertained, the preponderance of the left-sided causes over those on the right side suggested the very practical point of opening the abdomen through the left rectus muscle. Clinically carcinomata of the transverse colon exhibit these characteristics: the absence of warning to the patient, the unannounced onset of acute intestinal obstruction, and the presence of a small annular growth. Hence, when it came to treatment the surgeon had two things to attend to—intestinal obstruction primarily and a carcinoma of the transverse colon secondarily. The former was a condition in which myriads of micro-organisms abounded. The organisms were responsible for many and much of surgical failures in the removal of growths from the colon. Hence he would urge that the surgeon was very unsound who attempted to do constructive work—e.g., the plastic work of an anastomosis in the face of this sepsis. Therefore, when any degree of acute intestinal obstruction was present, a temporary colostomy alone should be done. The artificial anus and the growth should be removed about a fortnight or three weeks later, the ends of the resected bowel sutured and closed, and the cæcum anastomosed to the sigmoid. It was noteworthy that it was strongly advised that the surgeon should do nothing, not even the removal of the growth, but relieve the intestinal obstruction. In the speaker's experience patients so treated did better in both their early and late clinical post-operative stages than if the growth was removed and Paul's tubes inserted. It was far better to leave the reaction of the growth until the time of the anastomosis. An inflamed growth was far more likely to lead to trouble if any attempt was made to remove it than was an uninflamed growth. This remark applied both to near and remote consequences. Thus he did not like "playing" with inflamed growths any more than he liked "playing with fire." The best work was usually done with cool materials. From time to time carcinomata of the transverse colon were large, and their removal might require a partial resection of the stomach, or they might become adherent to the umbilicus and discharge through it. But these features were unusual, and need not be introduced into a discussion on general principles. In practical surgical work they were far most likely to be called upon to relieve the intestinal obstruction caused by a carcinoma of the colon. Having done this it might have to be decided how to resect this carcinoma. The anastomosis might be made local to the excised carcinoma when possible, and there might be an oblique or circular enterorrhaphy. If, as was the usual case, the excision of the artificial anus and the growth left too little transverse colon behind to allow of an end-to-end anastomosis being done he believed the best proceeding was to close the ends of the bowel, cut off the caput coli with the appendix, and anastomose by implanting the cæcum into the upper rectum or sigmoid. This anastomosis had the advantages of keeping the "second stomach"—the cæcum and ascending colon, so that less food escaped absorption than if these structures were removed; the appendix, always abnormal in these cases, was removed, and the anastomosis, though made far from the growth, was yet conservative. With regard to proceeding to radical measures in the excision of the growth his advice would be: "Never try radical measures on an inflamed growth when they can be avoided. Do not be deterred by the presence of enlarged glands as many are inflammatory, but beware of intraperitoneal adhesions." In other words, the surgeon need not be put off by extraperitoneal inflammation, but he should be easily stayed by intraperitoneal inflammation. There was no doubt about the attempt at the spontaneous cure of the carcinoma by the production of contracting scar tissue by the inflammation of the contiguous structures. It was the contraction of this non-carcinomatous tissue which produced the intestinal obstruction in ring carcinomata—not the carcinoma as in the cæcum and rectum. Hence ring-carcinomata were more amenable to operation and gave better results from operation than did local and lumpy carcinomata. Hence he would make the statement that the results from the judicious resection of the ring carcinomata of the transverse, iliac, and pelvic colon gave better results than did resections for asymmetrical carcinomata of the cæcum and rectum. To demonstrate this it was practically always necessary to do the operation in two stages, and patients did not always like this procedure. Firstly, one should do a colostomy, relieve any obstruction, and make the tissues less septic; secondly, resect the growth, anastomose, and close the colostomy. In conclusion, he must say that he regarded a transverse colostomy as only a temporary measure. Colostomies had in general to be where the disposition of troubles put them. Inguinal colostomy was the form for choice. In general its results were better, more certain, and its performance easier, and it left a longer piece of colon for absorption. Colostomies were often olfactorily unpleasant, and something must be left to the choice of the patient. The transverse colostomy was apt to be more obtrusive. Mr. Corner said he had now in hospital a poor woman with a transverse colostomy who had a large prolapse of the mucous membrane from the bowel between the colostomy and the spleen; an ascending prolapse—a condition unknown in inguinal colostomy. And it was a matter of taste whether the patient preferred to have fæces in his umbilicus or in his pubic hairs. But putting aside all æsthetic considerations, on surgical grounds he thought the inguinal form of colostomy the better. A transverse colostomy had a secondary and distinct rôle in surgery.

Mr. H. W. **Carson** said that the following was a summary of his last 20 cases of tumour of the colon: 1 case of actinomycosis of the cæcum, 1 case of ileocæcal tuberculosis, 4 cases of growth of ascending colon (malignant , 1 case of growth of splenic flexure (malignant), 3 cases of growth of descending colon (1 innocent, 2 malignant), and 10 cases of growth of sigmoid flexure (pelvic colon). He had brought two specimens of growths of the ascending colon for which he had done extensive resections, and their microscopical slides, which were interesting owing to their diverse characters. Both occupied practically the same site—i.e., within an inch of the ileocæcal valve; both were large growths with ulcerated nodular surfaces; both were malignant, but one was a spheroidal-celled medullary carcinoma and the other was a typical columnar-celled carcinoma. Of the two he believed it was agreed that the former was the more rapidly growing and had a worse prognosis. Clinically, these growths were quite different in their course from growths of the colon at and below the splenic flexure. They formed large masses, giving rise to tumours which were nearly always palpable and sometimes visible; there was a comparatively long history of intestinal discomfort—e.g., pain, diarrhœa, blood in the stools—and they rarely gave rise to obstruction. Comparing this with the history of growths of the left colon, of the 13 malignant cases in his list 6 had acute obstruction as the first sign, 3 had acute obstruction following a history of intestinal discomfort, 1 had chronic obstruction, and only 3 were free from obstruction when they came under his notice. None had diarrhœa or blood in the stools, 4 had

had pain and 5 had had long-standing constipation. It was this risk of obstruction which led to the heavy death-rate, for he found that of the 9 cases where acute obstruction had occurred 6 died shortly after operation. He had no doubt that many cases in whom obstruction seemed to be the first sign had had premonitory symptoms such as abdominal pain, irregularity of the bowels, or flatulent distension, and there was much to be done to educate the public to the necessity for seeking advice when these symptoms occurred in late middle life. With regard to treatment he said that it was generally agreed that in acute obstruction no attempt should be made immediately to restore the continuity of the bowel. The methods of relieving the obstruction varied between a cæcostomy, a colostomy (transverse or descending), and the excision of the growth with the formation of an artificial anus. Of these methods he was in favour of the last if the growth was found to be free of adhesions. If there was any difficulty in delivering the growth through the wound he preferred a colostomy in the neighbourhood of the growth rather than at a distance, as this prevented stasis in the intestine between the opening and the growth which might keep up the toxæmia. The subsequent operation of excision should be done at the earliest in three weeks. He was not satisfied that even if there was no absolute obstruction it was safe to do an immediate anastomosis of colon to colon. In the ascending colon the conditions were absolutely different. Obstruction was rare and anastomosis was made between the ileum, which was rarely injured, and a healthy portion of colon well beyond the disease. It remained to decide upon the best course to adopt. If the growth was inoperable a short-circuiting operation should be done. If the growth was operable it should be removed, and the important point to settle was the necessity of removing the glands which might be most implicated at the highest point—namely, near the origin of the ileo-colic artery from the superior mesenteric. It was probably best to start the operation at this point, tying the ileo-colic artery near its origin after dividing the transverse colon at the selected spot, and removing the whole chain of glands as they lay on the ileo-colic and right colic vessels. The ileum should be divided at least six inches from the ileo-cæcal valve and a lateral anastomosis done between the ileum and the transverse colon after closing both ends. The re-peritonisation of the raw surface left after the removal of the ascending colon was very important.

Mr. G. E. Gask raised the question as to what should be done in cases of acute obstruction. He put in a plea for short-circuiting rather than colostomy. It was more pleasant and if a further operation was advisable an anastomosis had already been obtained. The mortality of the conditions under discussion was very high, and this was due, he thought, to sepsis, already present in the bowel. The peritonitis following operation was due to infection on opening the bowel. No satisfactory operation had been devised by which a bowel could be opened which was free from danger by sepsis. He favoured lateral anastomosis rather than the end-to-end method, after excision of the growth.

Mr. F. Swinford Edwards agreed that growths of the large intestine were not highly malignant. He used end-to-end anastomosis and always left in a drainage tube for a few days. After excision of malignant growth in the pelvic colon there was considerable danger of stenosis. This he treated by a large Kelly's tube. He had found the sigmoidoscope of great value in the diagnosis of growths in the pelvic colon. He had abandoned inguinal colostomy in favour of hypogastric colostomy through the rectus.

Dr. Herbert French spoke of the difficulty of diagnosis and of the possibility of obtaining aid from bismuth meals or enemata, from sigmoidoscopy, and from chemical examination of the fæces for occult blood or other bodies. Was wasting in a patient with suggestive symptoms a clear indication of the need for operation?

The President also agreed that such growths were often very slow in growth. He had seen more than one case where a secondary growth in bone had been operated upon on the supposition that it was primary. By microscopical examination it had proved to consist of columnar cells and secondary to growth in the bowel. Only after watching the patient for some months did symptoms arise pointing to the original lesion. This showed how insidious such growths were. He had also followed up cases five, seven, and nine years after colostomy had been done, and the growth had been shown to be carcinomatous microscopically. It was sometimes difficult even at the operation to be sure that malignant growth was present and to distinguish it from conditions which resembled it, like hyperplastic tuberculosis and actinomycosis. There was, therefore, plenty of excuse for the medical attendant who had not this help. If he performed a transverse colostomy he always removed the navel at the same time.

Mr. Corner, Mr. Sherren, and Mr. Waring replied.

Bradford Medico-Chirurgical Society.—The opening meeting of this society was held on Oct. 20th. Dr. A. Manknell delivered the presidential address on Vaccination. After thanking the members of the society for electing him to the chair, Dr. Manknell said he hoped to refresh their memories on the subject of vaccination. Jenner's wonderful discovery had had far-reaching effects in its influence on the course of science and in the development of vaccine treatment, which had so largely bulked in their minds during the last ten years. After tracing the history of small-pox from the earliest times, Dr. Manknell then went on to show by means of statistics how it became apparent that revaccination was necessary. The pathology of small-pox was then discussed in detail, and statistics were given showing the influence of vaccination upon the severity of the attacks, the modification of the disease, and the alteration of the age-incidence. As regards the last, before vaccination small-pox was a disease of infancy. Vaccination had raised the age-incidence in two ways: 1. By reducing the number of persons in any given population who are susceptible to small-pox it reduces the chances of epidemics and lengthens the interval between them. 2. By rendering those once vaccinated insusceptible to small-pox for a period of years it raises the age-incidence in such to a higher range than among the unvaccinated. The influence of vaccination upon the fatality of small-pox was also shown in a marked degree by numerous figures, and Dr. Manknell laid particular stress on the fact that insufficient vaccination is a great evil, statistics showing that in patients with only one scar the ravage of the disease is infinitely more severe than in those patients with three or four scars. As instancing the value of revaccination, Dr. Manknell quoted the continental armies and gave striking figures. The influence of sanitation on small-pox was then discussed in full.—The meeting closed with a vote of thanks to the President for his address.

Ulster Medical Society.—The opening meeting of this society was held in the Medical Institute, Belfast, on Oct. 29th. The retiring President, Mr. A. B. Mitchell, having, in a valedictory address, thanked the Fellows and Members, and especially the honorary secretary, Mr. S. T. Irwin, for the help and support they had extended to him during the past session, in very suitable terms, introduced his successor, Dr. J. S. Morrow, who gave an introductory address on Disease in its Medico-Legal Relation to Accident. From his extensive practical experience as medico-legal adviser to the great shipbuilding yard of Harland and Wolff and other shipbuilding companies and insurance societies, Dr. Morrow was able to bring forward unique examples of cases in which disease existing before or occurring after an accident led to litigation requiring the most careful diagnosis and medico-legal management. It is to be hoped such a useful discussion of some of the most difficult medico-legal questions will be published in full. On the motion of Sir John Byers, seconded by Professor T. Sinclair, a vote of thanks was accorded to Dr. Morrow and to Mr. Mitchell. Copies of the Transactions of the Ulster Medical Society for session 1913–14, which constitute a large volume, were distributed at the meeting. It has been decided that in the present troubled times the annual dinner of the society is to be postponed.

West London Medico-Chirurgical Society.—A clinical meeting of this society will be held to-day, Friday, Nov. 6th, in the society's rooms, West London Hospital, Hammersmith, W. Cases will be shown at 8 p.m., and the chair will be taken at 9 o'clock.

Reviews and Notices of Books.

A System of Clinical Medicine dealing with the Diagnosis, Prognosis, and Treatment of Disease, for Students and Practitioners.

By THOMAS DIXON SAVILL, M.D. Lond. Fourth edition. London: Edward Arnold. 1914. Pp. xxviii. + 948. With 4 coloured plates and 120 figures. Price 25*s.* net.

THE fourth edition of the late Dr. Savill's well-known text-book of medicine has been thoroughly revised and brought up to date by his widow, with the assistance of various experts in several of its departments. Dr. Savill's original object in writing the book was the production of a volume in which medicine should be considered from the point of view of symptomatology. As he pointed out, practical experience shows that patients seek medical advice because they have some morbid symptom to complain of; accordingly he began his descriptions of the various diseases by an account of the symptoms to which they give rise. Next, he devoted great attention to the diagnosis, so that the book might serve the purposes of a clinical index of diseases, and he laid great stress on the clinical advantages of the habit of passing in rapid review all the possible diseases that might account for a patient's leading symptom.

It is needless to say that Dr. Savill's plan of campaign is one of the greatest difficulty, as compared with the method of regarding diseases as separate entities which has almost invariably been adopted by the writers of medical text-books. Yet there can be no doubt that he executed his plan with great skill and attained a large measure of success, neglecting nothing in the way of etiology, pathology, and treatment to make his work complete. Important diseases are indicated by the use of large type, rarities are described in smaller type, and abundant cross references are given to avoid repetition and increase the utility of the book.

The editor's work has been done with skill and thoroughness; there is an excellent index. The volume contains an immense amount of information, and may be warmly recommended to senior students and practitioners of medicine on the look out for a sound summary of clinical diagnosis.

Gunshot Injuries: How they are Inflicted, their Complications and Treatment.

By Colonel LOUIS A. LAGARDE, United States Army Medical Corps (retired). London: John Bale, Sons, and Danielsson, Limited. 1914. Pp. 398. Price 18*s.* net.

THE writer of this treatise speaks with authority on the subject, having lately been commandant and professor of military surgery in the United States Army Medical School, as well as professor of the same subject in the University of New York. The results of the experience of army surgeons in the Spanish-American, Boer, Russo-Japanese, and Balkan wars have been compared with those in pre-antiseptic times, the characteristic features of the injuries produced by modern high velocity projectiles from small calibre rifles being dealt with in careful detail. The first five chapters treat of gunshot wounds in general, their characteristic lesions, symptoms and treatment. The next seven deal more particularly with injuries of the head, spine, chest, abdomen, blood-vessels, joints, and long bones seriatim. The medico-legal aspect of such wounds, and the application of X ray apparatus in the field are considered briefly in conclusion.

The rifle in use at the present time by the United States Army weighs 9½ lb. and measures 24 inches in the barrel. The bullet (modified in 1906) weighs 150 grains, and is 1·08 inch long; the powder charge is 48 grains. The striking energy of the bullet is 2400 foot pounds, the muzzle velocity 2700 feet per second, and the extreme range of the rifle 4891 yards. It is sighted for 2850 yards. With this rifle used as a single loader 23 aimed shots have been fired in one minute; using magazine fire 40 shots in a minute have been fired from the hip without aim. The 1906 model bullet now in use has a length of 1·095 inch, and a maximum diameter of 0·3085 inch, weighing 150 grains; it is of lead, with 3·3 per cent. of tin, enclosed in a cupro-nickel jacket. It is claimed that the present weapon is the most accurate rifle in the world. "With a high muzzle velocity and a flat trajectory little remains to be desired, unless the trajectory can be further lowered, and the continuous danger space for a height of 68 inches extended from the present range of 730 yards to a range of 1000 yards."

With regard to the observations and experiments made as to the effects of bullet wounds on cadavers, Colonel Lagarde goes into considerable detail. He believes that the experimental procedure of firing into cadavers, animals, and inanimate matter is the best way to ascertain the effects of projectiles on tissues, at any rate in peace. As to shell wounds, it is mentioned that one of the chief menaces in naval warfare to-day will be poisoning from powder gases arising from bursting shells. Surgeon-General Stokes has described two types, one resembling gas poisoning, the other irritative in its effects.

The extreme importance of infection in gunshot wounds is dealt with in the fourth chapter. After referring to the experiences of the great Civil War, and Weir's admission that the surgeons were more fatal to those under their care than the battle—"death followed the path of the surgeon, with his poisonous technique and dressings"—the author shows the regular decrease that has occurred in mortality from wounds in successive campaigns, the figures referring to the cases that "reached the hospital." In the Civil War the mortality was 14·3 per cent., in the Spanish-American war 6·0, in the Boer war 8·0, in the Russo-Japanese war 5·8 (Japanese) and 3·4 (Russian). "Antisepsis and the use of projectiles of the reduced calibre rifle have combined to bring about marked beneficence in the war wounds of modern times." To take gunshot injury of the knee-joint as an example: in the Civil War the mortality from this injury was 53·7 per cent., and of the rest none returned fit for duty, as all who recovered had suffered amputation. With antiseptic treatment in the Russo-Turkish war, 1877–78, the mortality was 11·1 per cent., but no cases returned fit for duty; in the period 1898–1902, the United States Army statistics (76 cases) gave a mortality of only 6·5 per cent., and 39·4 per cent. returned fit for duty; finally, in the Santiago campaign of 1898, the injuries resulting from small calibre missiles, of 17 cases the whole recovered, and 81 per cent. returned fit for duty. This excellent result was due partly to the humane features of the reduced calibre bullet, partly to the use of antisepsis. The various theories that have been suggested to account for the so-called explosive effects of modern projectiles are considered. High velocity is the most potent factor, and the true cause of these explosive effects is "the transfer of energy from the bullet to particles of its own composition when it disintegrates, as well as to spiculæ of bone, or particles of fluid, or soft tissues." The treatment of the various kinds of wounds from gunshot is discussed fully according to the regions affected.

The illustrations are numerous and excellent, and the directions are clear and precise. The manual is to be thoroughly recommended.

The Story of Bethlehem Hospital from its Foundation in 1247.

By EDWARD GEOFFREY O'DONOGHUE. London: T. Fisher Unwin. 1914. Pp. 427. Price 15*s.* net.

FOR upwards of 650 years the Hospital of St. Mary of Bethlehem has, in the words of the founder's deed poll, ministered to "the benefit in manifold ways of the City of London," and since 1377 more particularly by caring for those stricken in mind. Ever since the year 330 there had existed at Bethlehem the Church of the Nativity, built and dedicated by Constantine, and in the year 1247 Simon FitzMary, an alderman of London, gave all his lands in the parish of St. Botolph without Bishopsgate for the foundation of a priory with a prior, canons, brothers, and sisters, which priory was to be a daughter house of the mother church at Bethlehem, was to receive the Bishop of Bethlehem and the other clergy of that house whensoever they should come, and besides this duty should celebrate divine services for the souls of sundry persons mentioned by the founder, and in addition for all the souls of the faithful departed. The rule followed was that of the Augustinians.

The priory apparently met with misfortune, for in 1346 the master and brethren petitioned that it might be received under the protection and patronage of the City. They had, says the petition, suffered from "losses, damage to property, acts of violence, oppression, extortion, and danger of death; from reviling, scandal, and their own dissensions." On Oct. 15th the City took the house and order under its protection, and the institution seems to have enjoyed quiet until 1375, when Edward III. seized it as an alien priory. What happened then is uncertain, but in 1377 certain lunatic patients were removed from "The Stone House" at Charing Cross to the Hospital of St. Mary of Bethlehem, so evidently the hospital was able to continue some at least of its work.

Between 1388 and 1403 the hospital had a porter, one Peter Taverner, who was also the treasurer, and who seems to have been a knave of the first water. In 1403 the hospital also had under care six male lunatics, with material for their safe keeping—to wit, 4 pair of manacles, 11 chains of iron, 6 locks and keys, and 2 pair of stocks. The graceless Peter, besides diverting the subscriptions of the charitable to his own use, was charged with stealing a number of blankets, sheets, and mattresses, and in addition the aforesaid chains, manacles, and locks. He was eventually fined £100, which he does not seem to have paid, and was also removed from his post. The hospital continued to run the not unusual career of scandals, commissions of inquiry, reformation, further scandals, more commissions. In 1457 John Arundell, chaplain and physician to Henry VI., was appointed Master, and about 70 years later—namely, in 1529—a man of a very different stamp, George Boleyn, obtained the post. At the great spoliation Bethlehem, together with St. Bartholomew's Hospital, was grudgingly granted to the City. In 1619 another physician was elected Keeper or Master, Hilkiah Crooke, a not very reputable personage, who was eventually dismissed his post and called upon by the College of Physicians to resign his Fellowship.

The Great Fire spared the hospital, but by 1674 the buildings had become so ruinous that it was decided to remove and rebuild it on another site. This site was in Moorfields, and the architect chosen was Robert Hooke, best known as a natural philosopher. But he was also a great architect, as his building for the second Bethlehem Hospital shows. The main building was finished in 1676. This is the "Bedlam" which figures so prominently in seventeenth and eighteenth century literature and in Hogarth's pictures, and one of the most remarkable figures of the hospital during this stage of its career was Dr. Edward Tyson, physician from 1684 to 1708. He was one of the earliest to institute a system of "after-care," but even his efforts could not prevent the disgraceful scenes in Bedlam on public holidays when the unfortunate inmates were made a show and a mockery; and it was not until 1770 that it was ordered that admittance should be by ticket only, and that accredited visitors should be accompanied by keepers or nurses. By 1800 Hooke's beautiful building, owing to insecure foundations and the tampering with the brick piers of the basement for purposes of increased storage, was in a very alarming condition, and it was decided to rebuild the hospital elsewhere. A site was chosen in St. George's Fields, and the new buildings were begun in 1812 and opened for patients in 1815. The architect appears to have been E. John Gandy, though his plans were altered by James Lewis, the surveyor. At this date the treatment of insanity began to be studied in a more gentle and reasonable spirit, owing in great measure to the interest aroused in the subject by the insanity of George III. Tuke in England and Pinel in France had been for some time experimenting in treatment without coercion. In 1837 the Charity Commissioners inspected Bethlehem, and on June 28th, 1851, the Commissioners in Lunacy made the first of their periodical inspections. That year, too, Dr. W. C. Hood was elected resident physician and lit the light of progress which has ever burned more brightly; not only metaphorically did he throw light on dark places but literally, for it was he who did away with the heavy iron gratings to the windows.

So we leave Mr. O'Donoghue's most interesting record of an institution which has endured for nearly seven centuries. The arms of the hospital show in a way an epitome of its history, and in all points save one they are those originally designed; there we see the basket of bread in allusion to Bethlehem, "The House of Bread," and again the star. The third charge used to be a chalice with the Host issuing from it. By the middle of the seventeenth century the arms had apparently been forgotten, for the governors asked Sir William Dugdale on the point. He it was who provided them with the old arms except that a skull replaces the Host in the chalice, a curious alteration upon the meaning of which it is legitimate to speculate. Dugdale was no bitter Protestant, so the substitution cannot be a deliberate insult levelled at the chief rite of Christianity. Did he wish to emphasise the fact so prominent in the history of spiritual conflicts that the attack of the powers of evil is most violent at the time of spiritual exaltation? Or, for Dugdale was an ardent antiquarian, was he thinking of the Pagan version of the Grail legend as found in the Mabinogion when Peredur was in the castle of the lame king and saw two maidens enter, "which had between them a large salver in which was a man's head, surrounded by a profusion of blood"? But whatever be the meaning of the change, Bethlehem Hospital is now in very truth a place where those troubled in mind receive the gentlest and most careful treatment.

Diagnostics of the Fundus Oculi.

By EDWARD L. OATMAN, M.D., Surgeon, Manhattan Eye, Ear, and Throat Hospital, &c. Comprising one volume of text, with 234 illustrations and 4 coloured plates, and two portfolios containing 79 stereograms and 8 diagnostic cards. Troy, New York: The Southworth Company. Pp. 303.

Dr. Oatman has attempted in these volumes a greater task than the title indicates. It is nothing less than an endeavour to write a treatise of ophthalmology on the basis of individual cases. Such a herculean task is foredoomed to failure, but it has been a brave fight against odds.

One volume is devoted to the text, two to stereograms. The latter are very beautiful, but they of course present only a false stereoscopic effect. We doubt if this method of reproduction has any advantage at all. With the ordinary ophthalmoscope the fundus is viewed with one eye only, and no stereoscopic effect is obtained. Why therefore simulate such effect by artifice, since greater verisimilitude cannot thereby be obtained? If the drawings had been on a larger scale they would have been worthy rivals of the best to be found in any ophthalmoscopic atlas.

The text opens with an elementary chapter on the examination of the eye, and is followed by chapters on the normal fundus, congenital anomalies, affections of the choroid, sclerosis of the retinal vessels and retinal hæmorrhage, angiopathic retinitis, closure of the retinal vessels, detachment of the retina, degeneration of the retina, miscellaneous affections of the retina, optic neuritis and optic atrophy, myopia, glaucoma, and intraocular and orbital tumours. Whenever possible a stereogram is used as a peg upon which to hang an exhaustive account of each condition. So far as individual sections are concerned the descriptions are full, accurate, and well presented. Particular attention is devoted to pathology, of which Dr. Oatman is well known to be an ardent student. The photographs of pathological conditions are amongst the best which we have seen and have been beautifully reproduced. In many cases the records show evidence of original research and many more or less complete bibliographies of the literature are given.

The chief criticism to be advanced against the text is the inequality of the treatment of the subjects. Some of the accounts are exhaustive, others scanty, and lacunæ are not wanting. The fault is serious in a treatise intended for the use of students, who are thus liable to obtain a wrong perspective. Yet the work is well worthy of a place in every ophthalmological library and will often be referred to with profit by elementary and advanced students alike.

LIBRARY TABLE.

Atti del I° Congresso Italiano di Radiologia Medica. Pavia: Mattei and Co. 1914. Pp. 246.—We have received a copy of the Transactions of this Congress held at Milan in October, 1913, by the Italian Society of Medical Radiology. It contains the opening address of the President, Professor Augusto Righi, on the Nature of X Rays, in which he puts forward the theory that these rays are of the same nature as light rays, and hence are manifestations of electro-magnetic waves propagated in the ether. There are four important papers: one dealing with the practical application of high intensities of X rays, by Professor V. Maragliano, and another, by Dr. A. Busi, on X ray investigation of the skull, comprising fractures and the presence of foreign bodies, lesions secondary to changes in the interior, with special reference to enlargement of the pituitary body, of which he gives details of several interesting cases. These show that the various processes which produce more or less marked changes in the sella turcica are: (1) intracranial diseases which cause a gradual increase of pressure, such as cerebral tumours in general and chronic hydrocephalus; (2) supra- and intra-sellar tumours, comprising isolated chronic hydrocephalus of the third ventricle and chronic hydrops of the cisterna chiasmatis; (3) various diseases of the sphenoid and aneurysm of the internal carotid in the sigmoid groove; and (4) enlargements of the pituitary body. Other sections refer to changes in the skull in connexion with otology, ophthalmology, and odontology. Dr. P. Tandoja contributes a compendious paper on the radiology of the intestines, which should prove a valuable guide to those who make a special study of this branch of the subject. The appearances of the normal duodenum, small intestine, and colon are separately described and contrasted with the various pathological changes to which they are each subject. The last paper is devoted to Roentgen and radium therapy in gynæcology, by Professor M. Bertolotti. The publication concludes with 78 shorter communications on a variety of subjects, the last of pathetic interest, being an account of the necropsy performed on one of the most esteemed workers in this branch of science, Emilio Tiraboschi, who succumbed in December, 1912, to an aplastic form of pernicious anæmia caused by exposure to X rays, the destructive effect of which he had never protected himself against.

Lead Poisoning from the Industrial, Medical, and Social Points of View. By Sir THOMAS OLIVER, M.A., M.D. Glasg., F.R.C.P. Lond. London: H. K. Lewis. 1914. Pp. 294. Price 5s. net.—This little book contains the lectures delivered by the author at the Royal Institute of Public Health and treats of the various modes by which lead gains entrance into the human system, how its presence affects the organism, and how it may be got rid of. Notwithstanding the great extent to which lead is used in various industrial processes, a great reduction in its evil effects has been brought about by the inspection and regulations of the Home Office. Among the industrial processes especially dealt with are lead smelting, manufacture of red lead and white lead, china and earthenware and pottery, electrical accumulator works, printing and type-founding, plumbing, dyeing, glass-making, tinning, diamond cutting, and house painting. The modes of entrance of the poison, the onset of symptoms, the physical signs and other phenomena, and the special effects of lead on vision and the nervous system, as well as its peculiar effects in the female and its effects on motherhood, are included, and the treatment, preventive and curative, is described. The book closes with the various factory and workshop orders relating to the subject that have been promulgated. There is an adequate index. The work will prove of service to those especially interested in the subject.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLVIII., No. 5. September, 1914. Cambridge University Press. Pp. 357–464. Price 7*s.*—The Mechanical Factors which Determine the Output of the Ventricles, by S. W. Patterson and E. H. Starling. After an interesting and explanatory introduction the method used is described. Practically the preparation employed is the now well-known heart-lung preparation which was obtained from dogs weighing from 4 to 6 kilos. The authors find that: 1. The output of the heart is equal to and determined by the amount of blood flowing into the heart, and may be increased or diminished within very wide limits according to the inflow. 2. The maximum output may amount to three litres per minute for a heart of 56 grammes. 3. With a minimal inflow the venous pressure on the two sides of the heart may be zero, and with increasing inflow rises at first only slightly so long as the amount of blood flowing in is not more than sufficient to exert a minimal distension on the relaxing ventricles. 4. The greater the arterial resistance the higher will be the venous pressure for any given inflow. 5. The greater the arterial resistance the sooner will the inflow attain its optimum and the output its maximum. 6. If the inflow is maintained constant alteration of rate of heart-beat does not alter the output per minute. 7. The greater the pulse-rate the larger may be the venous inflow without raising venous pressure beyond the optimum. The maximum output therefore increases with increased rate of heart-beat. 8. The optimum venous pressure is the amount necessary to produce "maximal" dilatation of the heart during the period of diastole. The maximum size of the heart depends on its structural arrangements, and in the intact animal is determined by the pericardium. It probably represents the size beyond which the heart could not dilate without causing its muscle fibres to act at considerable mechanical disadvantage in raising intracardiac pressure. 9. With a constant inflow fatigue of the heart is shown by a rise of venous pressure accompanied by increased diastolic filling and mean volume of the heart, the outflow remaining constant. The statements as to venous pressure apply to both sides of the heart. When failure occurs under a maximal load either the right or the left side of the heart may fail before the other side.—The Time Relations of Acid Production in Muscle during Contraction, by H. E. Roaf. It is a well-known and long-established fact that muscular contraction causes a production of acid. The author placed small medusæ in sea water to which various indicators were added. The most successful indicator used was neutral red, in which the medusæ stain a faint pink. At each contraction of the muscular plate the colour became a deeper red and then faded again. We know that the lactic acid formed after contraction of a muscle is removed by some process requiring the presence of oxygen. The author describes his electrical method of measuring the change in hydroxyl ion concentration of muscle, for which reference may be made to the original paper. From a calculation of the time phases of the capillary electrometer used and other data the author concludes that his experiments favour the view that the increase in acidity is the cause of the shortening of muscle. Repeated stimuli lead to a fusion of electrometer curves due to increase in acidity before fusion of contractions occurs.—The Origin of the "C" Wave in the Jugular Pulse, by James M. McQueen and A. W. Falconer. The source of this wave has been in dispute. The authors agree with those who hold that it is of auricular origin, and not to the impact of the neighbouring carotid artery.—Myothermic Experiments in Salt Solutions in Relation to the Various Stages of a Muscular Contraction, by Viktor Weizsäcker. This paper is highly technical and of particular interest to physiologists. Broadly speaking, the author states that his results strengthen the theory of a chain of two different machines in muscle: (1) contraction-mechanism and (2) oxidative recovery mechanism.—Gaseous Exchange in the Decerebrate Animal, by Charles G. L. Wolf and T. S. Hele. A technical paper.—The Suprarenal Bodies and Diuresis, by Douglas V. Cow. It appears that different effects are produced by perfusing (*a*) directly through the renal arteries and (*b*) through the aorta of cats. Two sets of experiments were made, from which the author concludes that the suprarenal bodies are direct regulators of urinary activity.—The Temperature Coefficient of the Refractory Period in Nerve, by E. D. Adrian. This paper also is highly technical.

St. Mary's Hospital Gazette for October is a very interesting number. The words "War Number" in big red letters suggest its general scope. It contains an editorial note on St. Mary's and the war, from which we learn that St. Mary's men preside over half the base hospitals of London, and are represented on another. Captain W. H. Willcox, R.A.M.C. (T.F.), describes the Third London Base Hospital. Mr. Ernest Lane gives an account of the American Women's Hospital at Paignton, which on Sept. 27th received at 24 hours' notice 130 patients, mostly from Mons and Soissons, and further batches of 29 on Oct. 5th and 121 on Oct. 6th. The wounds were naturally for the most part septic on arrival, but as they were principally due to shrapnel the tracks were open, so that there was no pocketing of pus. Dr. A. Hope Gosse records the work done by the hospital yacht *Liberty*. Lieutenant W. D. Arthur writes from the forces in France, and says: "Five of our officers have gone to the front already, and of these two are killed and another *hors de combat*. These men were from our own hospital staff, civil surgeons like myself, and one of them a married man with three young children." There is also part of a letter from a late houseman at the front, who as medical officer attached to the Middlesex regiment finds his work "most congenial." There is an obituary notice of Lieutenant J. F. O'Connell, R.A.M.C., who was killed at the battle of the Aisne on Sept. 20th. The list of St. Mary's men and nurses serving in various capacities in connexion with the war occupies seven columns.

Proceedings of the Prehistoric Society of East Anglia, 1913–14. London: H. K. Lewis. Pp. 385–491. Price 3*s.* 6*d.* net; postage 3*d.*—Those who take a keen delight in digging out knowledge of the far-off ancestors of the human race by unearthing and observing and comparing their fossil remains, the implements of which they made use, and so forth (and obviously they include many medical men), will always find a fund of, to them, intensely interesting material in the "Proceedings of the Prehistoric Society of East Anglia." The issue now before us contains interesting papers on Flint Remains, by the President, Mr. J. Reid Moir, Mr. A. E. Peake, Mr. J. S. Warburton, Mr. W. G. Clarke, Mr. Alfred Schwartz, Mr. H. H. Halls, Colonel A. W. Jamieson, Mr. F. N. Haward, Mr. Reginald A. Smith, and Mr. Bellerby Lowerison. An Early Norfolk Trackway: the "Drove Road," forms the subject of a communication by Mr. W. G. Clarke and Mr. H. Dixon Hewitt. Mr. Miller Christy publishes a comment on the report of the committee on the "Red Cray Shell Portrait." Mr. Alfred Schwartz outlines a scheme for organised research on flint instruments. Mr. Walter Rye describes an East to West Trackway across Norfolk, and Lieutenant-Colonel W. Underwood gives a further review of recent advances in "palethnology." If we might venture a criticism, we would suggest to those who devote so much enthusiasm to digging out an interpretation of fossil and other remains not to go out of their way to throw unnecessary obstacles in the way of those who have to dig out the meaning of words from their component roots. The root of the Greek word for ancient is not "pal"—though the French still use *mon vieux* in a sense equivalent to my pal—but palai (Latin, palæ; bastard English, pale); consequently we suggest palæethnology.

WE have received from Mr. H. K. Lewis, of 136, Gower-street, London, a "List of Medical Journals" conveniently grouped under subjects, and giving the subscription rates. It should be of use to librarians, secretaries, and individual medical men and specialists seeking information respecting periodical publications. It should be mentioned that the list was compiled and printed before the European crisis became acute, and notice is given that journals issued in "enemy" countries cannot be supplied until the war is over.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 7, 1914.

The Wounded in the War.

THE terrific fighting throughout the western area of the war, and especially in Flanders, where the Allied Forces are disputing successfully every inch of German advance along the Belgian coast of the Straits of Dover, has resulted in an appalling death-roll and in a commensurate number of wounded. Boulogne and Dieppe are towns of hospitals, and while as far as possible their accommodation is relieved by shipment to this country, the congestion still remains, with accompanying pressure upon all the arrangements for surgical treatment and for nursing. Nor is the evacuation of the wounded from these hospitals, or from similar institutions in close communication with the districts where the actual fighting is going on, a thing to be regarded complacently as an ideal course. A medical correspondent pointed out in the *Times* at the end of last week that while the stream of wounded into Boulogne continues, as it must continue, surplus cases will be shipped across the Channel with a rapidity which will not take sufficiently into regard the fitness of the patient to stand the prolonged journey. The circumstances have altered for the better, and the correspondent of the *Times* did not take into consideration the military exigencies of the situation, and was apparently unaware of the amount of provision for the care and accommodation of the wounded which was forthcoming. But the position of Boulogne is not quite comparable with that of other towns less immediately in the line of the direct and fierce German objective. There is great need for surgical assistance in the north of France. There is a shortage of hospital equipment in many of the towns whose position in the rear of the Allied Forces marks them out as natural places for the reception of the wounded, and though much has been done to remedy this, and though much is daily in the doing, the fact still remains that here especially, and also in many districts where the wounded have congregated, there is urgent need of surgical assistance. And there is great difficulty in providing it.

The difficulty is outlined in letters which we publish in our present issue from Sir VICTOR HORSLEY and Dr. JAMES DONELAN. There is in our country a large body of surgeons willing to proceed at once to France and to give their services at the places where they are most required, but who may not find it easy to make their proposals fit with the organisation which the Anglo-French committee of the British Red Cross has hitherto set in motion. We can quite understand that this should be so. The British Red Cross has a very high standard to maintain, and may feel that all movements towards flexibility, if taken under its ægis, are attended with a certain measure of risk to that standard. We have reason, however, to think that a policy more favourable to those who desire to give individual help will be pursued. There is considerable intercommunication with France now, and apart from the representatives of various journals, who are largely laymen, many medical men have been into France and have seen for themselves, or have learned from the lips of French colleagues, of existing needs that could be met, but which are not being met. There are plenty of British surgeons willing to go out to the assistance of the wounded in French hospitals, and a large array of French hospitals where their services would be of the first value; and all must agree that this supply and demand should be brought at once into proper relation, so long as the methods employed do not run counter to general military policy. Dr. DONELAN, who pointed out in our columns on Sept. 26th that there were French hospitals near the front where the services of British surgeons would be welcome, has received, we learn from his letter this week, many offers of assistance, and we are sure that, if the British Red Cross Society can help him to allot these volunteers to places where they are known to be wanting, much good will ensue.

We publish this week two communications which sufficiently account for the divergent opinions on the way in which the wounded are being treated in France. Our regular Paris Correspondent, who is now with the fighting forces in the southern area, tells distinctly how it has come about that elaborately planned machinery for the prompt and humane treatment of the wounded has been defeated by the unparalleled circumstances of the war. But he shows also that the French have risen to the unexpected conditions and are coping with them successfully. A correspondent from Chambéry shows well that at an important provincial centre the first effect of the war was to deprive the town of its complement of medical men who might have succoured the wounded, but he indicates that substitutes were found, and is able to report the resulting state of affairs as satisfactory. From both these letters written on the spot it would be possible to justify some of the trenchant things that have been said of the care of the wounded during the war, but from both it is also apparent that difficulties of the gravest sort have been triumphed over to a great extent.

Annotations.

"Ne quid nimis."

A MONTHLY RECORD OF ATMOSPHERIC POLLUTION.

WE publish this week a further record of atmospheric pollution as observed at 28 stations in the country. It will be seen that a wealth of valuable evidence is being accumulated which is bound to draw serious attention to an important gap in our sanitary organisation. The scheme has been well founded by the Committee for the Investigation of Atmospheric Pollution, which is responsible for obtaining regular monthly returns from the various observers. This committee will have the satisfaction of knowing, we hope in the not distant future, that when the consummation is reached, and the inexcusable pollution of the air by the smoke of our chimneys, domestic as well as industrial, is effectively suppressed, the spade work was theirs. We may, moreover, claim some share in initiating the movement, as in an annotation as far back as September, 1895, entitled "Is the Smoke Nuisances Act Properly Enforced?" we gave numerous examples of offences against the law. We suggested that the authorities should be roused to action in the matter and take immediate steps to bring to book any offenders, especially as they could avail themselves of simple means by which the production of objectionable smoke could be minimised. The Committee for the Investigation of Atmospheric Pollution are undertaking an important branch of sanitary service which should be widely appreciated.

THE DUCK AS A PREVENTER OF MALARIA AND YELLOW FEVER.

THE prevention of malaria and yellow fever by the use of animals which are the natural enemies of the mosquito does not seem to have received sufficient attention. Dr. S. G. Dixon, Commissioner of Health of the Commonwealth of Pennsylvania, has recently pointed out that the duck is one of the greatest enemies of the mosquito, and therefore can play an important part in the prevention of malaria and yellow fever. After trying the ability of fish to devour the larvæ and pupæ of mosquitoes with varied success he built two dams near one another on a stream, so that they gave exactly similar breeding grounds for mosquitoes. In one 20 mallard ducks were allowed to breed. The other was protected from water fowl, but well-stocked with gold-fish. The one remained for several months entirely free from mosquitoes, while the other swarmed with them in different cycles of life. To the infested pond ten well-fed mallard ducks were admitted. At first they were attracted by the tadpoles, but they soon noticed the larvæ and pupæ of the mosquitoes and ravenously devoured them in preference to any other food. After 24 hours no pupæ could be found, and after 48 hours only a few small larvæ. The motion of the water produced by the ducks of course drowned some of the insects, what proportion could not be estimated. For some years Dr. Dixon has been using ducks to keep down mosquitoes in swamps that would have been expensive to drain, but he never appreciated their efficiency until he made these experiments. In the work of Howard, Dyar, and Knab on "Mosquitoes of North and Central America and the West Indies" is an essay on the destruction of the mosquito and house-fly by Mr. W. Beutenmueller, who expresses the view that aquatic birds could be used for the purpose of destroying mosquito larvæ. Mr. W. Lockwood, of Boston, who has made a hobby of raising aquatic fowl, thinks that the spoon-billed duck is particularly adapted to the destruction of larvæ resting on the surface of water. While other birds, fish, spiders, batrachians, arthropods, and reptiles are all enemies of the mosquito, Dr. Dixon claims that none have the wide geographical range and the capacity of the duck for devouring large numbers of the larvæ and pupæ. Ducks can be used in ponds, swamps, both open and in jungles, and can be driven from place to place. We may point out that fish are being used for the destruction of mosquito larvæ with greater success than appears to have been obtained by Dr. Dixon. In Gambia a constant reserve of fish is maintained in some of the drains at the sea end, even in the dry season, and as required fish are transferred to other drains and private wells. More and more people are having their wells stocked with fish, and this measure proves more efficient than well covers, which must be frequently removed. Fish from the sea introduced into comparatively fresh water take some time to adapt themselves to it, but after a day or two become brisk and destroy larvæ with avidity. The number which can be destroyed is shown by the following sanitary report. A drain which had been dry for some time filled up to 90 yards from the sluice gate during high tides in April, the average depth being 4 inches. On April 23rd larvæ half-grown and over were present to the number of 2100. Eleven fish averaging 4 inches long and 5 averaging 2 inches, which had been kept some time in fresh water, were introduced at 11 A.M. Close inspection at 9 A.M. on the following morning did not show a single larva.

THE PHYSICAL SIGNS OF CARDIAC HYPERTROPHY.

IT has long been recognised that right or left-sided cardiac hypertrophy may occur; similarly, but with less clinical insistence, there may arise general cardiac hypertrophy. Right-sided hypertrophy is held to be strongly indicated when there is a well-marked epigastric pulsation, or on palpation a forcible thrust in this region; left-sided hypertrophy, on the other hand, is suggested by the presence of a local and forcible apex beat situated below and external to its normal position. These are commonly accepted clinical dicta. Later work has enabled both these clinical signs to be tested with a more searching accuracy in two ways. The form of the deflections of the string galvanometer applied to the heart (Einthoven) records, with proved efficiency, whether there is right or left-sided preponderance of ventricular action. In general these observations have borne out clinical findings; left-sided relative preponderance occurs with aortic disease (often) and interstitial nephritis; right-sided preponderance holds in most cases of mitral stenosis and in all cases of congenital pulmonary stenosis. Another method of checking clinical findings has been by careful post-mortem weighings of each ventricular mass. The technique is laborious, for the ordinary naked-eye estimations of supposed hypertrophy are wholly inadequate for accurate work. The correlation of these two methods with the clinical signs has led to some important facts, recorded by Dr. Thomas Lewis in *Heart* (1914, v., 367). In the first place clinical signs alone, though useful, are not, in a moderate number of cases, truthful. The epigastric thrust, for instance, as investigated in 53 cases, is shown to be as marked when the right ventricle is normal as when enlarged (as tested by weighing); and, again, even the local apical impulse may be due, not to left, but right ventricular hypertrophy. Secondly, in considering special valvular or circulatory conditions, it is found that whilst in most cases of mitral stenosis right preponderance exists, left may also be met with, especially when there is coexisting raised arterial tension. In aortic disease left-sided hypertrophy may or may not be present, as shown both by weighing and by the electrocardiogram. In interstitial nephritis, with raised blood-pressure, left-sided preponderance was especially prominent. The ratio L:R which is normally 1·8 (though subject to wide variation in different healthy subjects) becomes, with raised arterial tension, 2·0 or over. Dr. Lewis adds some general observations upon hypertrophy. He emphasises the need for more accurate measurements. "That changes in the mechanical condition of the circulation are the sole or even the chief causes of hypertrophy has not been proved." In man, for example, with aortic disease the increased weight of the heart may be even 280 per cent. more than normal, a hypertrophy never attainable in analogous animal experiments. Some of the largest hearts, again, are due to causes unknown. Many hearts show general hypertrophy. Finally, contrary to what would be expected, raised arterial tension produces the greatest left-sided hypertrophy when associated with mitral stenosis, more even than when associated with either aortic disease or purely renal lesions. "Evidently," as the writer says, "before we can consider our knowledge of hypertrophy in relation to valvular or renal disease to be at all complete, the number of hypertrophied hearts studied must be multiplied."

INTRATRACHEAL ADMINISTRATION OF ETHER AND CHLOROFORM.

THAT there must be certain advantages inherent in the administration of anæsthetics through a tube passed down the trachea is obvious to all who have had practical experience of the extent to which mechanical obstruction in the upper air passages is responsible for difficulties arising during inhalation anæsthesia. All these difficulties, whether from engorgement of the tongue and fauces, from spasm of these parts and sucking back of the tongue, from glottic spasm, or from mucus accumulation, are completely obviated by intubating the trachea. That this is the case has been amply demonstrated not only by the quiet conditions witnessed in the laboratory where animals are habitually anæsthetised through a tracheotomy tube, but also by the many cases in which a human patient is similarly anæsthetised after a preliminary laryngotomy or tracheotomy, as in operations for the removal of the tongue. In these cases, although there is no intubation from above, yet the upper air passages are cut out of the inhalation region just as they are when the trachea is intubated, and with a similarly gratifying result as regards freedom from all obstructive difficulties. To gain these advantages by intubating the trachea there are, however, certain obstacles to be overcome, and it remains an open question whether for ordinary routine work the gain justifies the extra time, labour, and apparatus required. The first obstacle is to be found in the difficulty that often arises in passing a catheter down the trachea. This difficulty is well illustrated by some of the cases described in Mr. Rupert Jones's article, which appears in our columns this week (p. 1087). There it will be seen that in one case as much as 30 minutes was expended in attempts to catheterise the trachea; in other cases there was considerable difficulty; in one the feat was found impossible. These difficulties diminish, no doubt, to a large extent with extended practice, but they are to be reckoned with, and particularly as they arise in the very cases where tracheal insufflation is otherwise so advantageous—for example, in cases of goitre and of removal of the tongue for cancer. A scrutiny of Mr. Jones's cases, as well as experience with apparatus somewhat of the type that he employed, leads us also to the conclusion that besides much practice in passing the catheter there is necessary for complete success in this work an apparatus of considerable complexity. The apparatus must provide for a sufficiently strong vapour percentage of ether, and must work at least fairly silently and with perfect regularity, besides providing the right amount of pressure and warming for the vapour. This question of pressure leads to reflections upon a second article which we publish this week (p. 1085), in which a method is described for the intratracheal administration of chloroform. It must be remembered that there is a distinct difference between merely supplying a vapour for the lungs to inhale, as is commonly done, for instance, when chloroform is given from a Junker's inhaler into a tracheotomy tube, and pumping vapour into the lungs at a positive pressure. Now it is the former process which Mr. W. Dakin Mart imitates in his intubation apparatus, but it is the latter which is the essential feature of intratracheal insufflation, as practised by Dr. F. E. Shipway and others who are exponents of the method. Moreover, we must entertain grave doubts as to the wisdom of seeking to imitate with chloroform the process which is safely carried out with ether, even in spite of the immediate opportunity afforded for the very efficient application of artificial respiration. It is just because tracheal insufflation renders possible the use of ether in many severe cases which had hitherto to be managed with chloroform that this proceeding has become so valuable an adjunct to the more usual methods of anæsthesia. For extensive operations within the thorax and for many of the severe cases in which there is likelihood of free bleeding into the mouth and pharynx intratracheal insufflation supplies us with a most efficient procedure that discountenances to a large extent the dangers inherent in these operations when undertaken with the use of chloroform.

THE WIDENING FIELD OF PRACTICAL PSYCHIATRY.

PSYCHIATRY is both theoretical and applied. Practical psychiatry consists in the application of knowledge gained from the study of mental disease to the problems of its prevention and cure in the individual and in the community. We believe it is becoming increasingly evident that practical psychiatry is in reality concerned with a social problem, the solution of which demands organisation and methods that are essentially of a public or semi-public character. In days gone by the main object of practical psychiatry was the seclusion of the individual no longer responsible for his actions; gradually it came to be recognised that in addition to caring for and feeding him definite medical treatment with a view to ultimate cure was an object worthy of attention, a goal worthy of aim; scientific study of the material proceeded *pari passu* with this adoption of modern therapeutic measures. Now, however, the time is ripe for further extension of the problem. It must be dealt with on still broader lines. Just as now the community as a whole is disposed to seek its own sanitary welfare, and to devote public funds to this end rather than depend upon private philanthropy, so the community is beginning to recognise that mental disease, as well as crime and poverty, must be dealt with socially—that is to say, that the attention hitherto more or less concentrated on institutional treatment must be directed also to the social conditions under which mental disorders arise. In an eloquent address by Dr. William L. Russell, superintendent of Bloomingdale Hospital, New York, to be found in the annual volume of *Transactions of the American Medico-psychological Association*, the importance of these developments and extensions in the treatment of the mentally afflicted is fully emphasised. In New York State earlier and better attention to this type of patient, both before and after institutional treatment, has resulted in definite gain to the individual. Instead of the relieving officers the medical officers of health are responsible for the handling of cases of mental disease. In the general hospitals of the large cities psychopathic departments and wards have been organised where prompt medical treatment may obviate any necessity of the patient's being transferred to an asylum. Mental out-patients' departments are found in many hospitals and dispensaries. The importance of domestic and social readjustment in most cases of mental disease cannot be over-estimated. Through the agency of what is called the social service department the domestic and personal difficulties under which the patients may labour are investigated and as far as possible compensated, and thus the application of what has been learned about the nature and causes of insanity is directed to its prevention. In this connexion we may call attention to a recently issued report of the work of the out-patient department of the new Henry Phipps Psychiatric Clinic at the Johns Hopkins Hospital in Baltimore. Dr. Macfie Campbell, who writes the report,[1] says that in nine months 543 patients presenting symptoms of mental disorder varying in type and degree have been examined. The cases have ranged from the subjects of definite organic brain disease to children with bad tempers. Dr. Campbell finds the work of his social service department invaluable, and a perusal of his report will go far to convince the reader of the bearing of practical psychiatry on many vital interests of the community. The scientific interest of the cases is of course considerable, but their treatment cannot be satisfactory unless and until it is recognised that the trouble for which the patient or his friends seek advice and relief is often what may be called a "disorder of adjustment." In a case of mental disease the primary disturbance may be at a level of the patient's activity little suspected, unless the whole matter of his environment is thoroughly gone into. In this way, as Dr. Campbell says, important social and educational issues are raised, and even where in the individual case little can be done the thorough study of the disorder in its complete setting may contribute data of value in relation to the mental hygiene of the community. This is the aspect of practical psychiatry that is bound, we feel sure, to impress itself more and more on the physician, and that the community as a whole will for its own sake sooner or later have to face.

THE HUNTERIAN SOCIETY AT THE BARBERS' HALL.

THE Worshipful Company of Barbers should possess more than ordinary interest for members of the medical profession, for in the year 1461 it was incorporated under a charter of Edward IV. with the right of its members to practise surgery, and what is said to be the first licence extant granted to any surgeon in England to practise surgery was given by it in 1492. In 1541 the Barber-Surgeons' Company was incorporated by Act of Parliament with the Company of Surgeons of London, a union which continued for upwards of 200 years.[1] When in 1745 the control of surgical practice in London and the education of practitioners with the accompanying endowments passed from the Company of Barber-Surgeons to the College of Surgeons of London (now the Royal College of Surgeons of England) the ancient Hall of the Barber-Surgeons in Monkwell-street remained, together with its contained records and art treasures, in the possession of the Worshipful Company of Barbers. Largely through the offices of Dr. Glover Lyon the Barbers' Company has now placed its handsome Council Chamber at the disposal of the Hunterian Society for its meetings, and it was there that on Oct. 28th Dr. Lyon delivered his presidential address before the Society. He gave an interesting account of the Barbers' Company and of its share in the evolution of the art and practice of surgery in England, and quoted from the old records many details illustrative of the punishment of quackery in the reign of Richard III., the state of surgery in the wars during Henry VIII.'s reign, the punishment for malpractice in 1635 (a case in which "Mr. Doctor Harvye," the discoverer of the circulation of the blood, figures as an "expert medical witness"), and of two cases of resuscitation after hanging, which occurred in the Hall respectively in the years 1587 and 1740. But the most interesting part of the address consisted in Dr. Lyon's description of, and comments on, the pictures and other objects of interest belonging to the Company, which were all exposed for the subsequent inspection of the visitors. Dr. Lyon paid a justly deserved tribute to the courtesy of the Company, which gladly affords opportunities of inspection to those who are likely to be appreciative of such antiquarian and artistic treasures. It is undoubtedly a great boon to lovers of such relics to examine the pictures at leisure away from the chilling atmosphere of a public gallery, and to handle the cups and other objects instead of merely gazing at them through glass covers. Not the least interesting of the exhibits was the original illuminated book of ordinances, which dates from the first half of the sixteenth century. Among the paintings are Holbein's celebrated picture of King

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[1] Johns Hopkins Hospital Bulletin, vol. xxv., No. 279, May, 1914.

[1] For an admirable account of the relations of the Barbers' and the Surgeons' Companies see the address by Sir Rickman J. Godlee on the Origin and Growth of the Royal College of Surgeons of England in THE LANCET of Nov. 22nd, 1913, p. 1443.

Henry VIII. granting a charter to the Company in 1541, all the personages represented therein being celebrities. To three of them Dr. Lyon gave special mention—viz., John Chambers, Henry VIII.'s physician and Archdeacon of Bedford, one of the founders of the College of Physicians; Dr. Butts, mentioned by Shakespeare in *Henry VIII.*, who attended Anne Boleyn and was sent by the King to Wolsey after his disgrace; and Thomas Vicary, five times Master of the Company, serjeant-surgeon to Henry VIII., Edward VI., Mary, and Elizabeth, chief surgeon at St. Bartholomew's Hospital, and author of "The Englishman's Treasure," said to be the first work on surgery published in English. Other pictures were portraits of Sir Charles Scarborough, of Edward Arris, founder of the Arris lectures, Sir Charles Bernard, serjeant-surgeon to Queen Anne, and Sir John Tweedy, who has linked in his person for a time the two divided companies, having been Master of the Barbers' Company as well as President of the Royal College of Surgeons of England. The Company's plate includes the silver gilt cup presented to the Company by Henry VIII., a characteristically graceful tankard presented by Charles I., and an appropriately solid flagon presented by the Roundhead professor of surgery, Thomas Collins. Finally, there is the Boscobel cup presented by Charles II., which again is an example of grace and instability.

THE ACTION OF DRUGS ON PLANTS.[1]

By Professor J. C. Bose, M.A., D.Sc., C.S.I., C.I.E.,
PRESIDENCY COLLEGE, CALCUTTA.

In the scientific study of the effect of drugs we should aim to get at the very root of the matter, in discovering the fundamental reactions of drugs on the simplest protoplasmic mechanism of the plant, for it will be admitted that it is only by the study of the simpler phenomena of irritability in the vegetal organism that we can ever expect to elucidate the more complex physiological reactions in the animal tissues. In connexion with this I may cite one of our greatest living authorities, whose work has become classical. In his standard work on medicine Sir Lauder Brunton expresses his deliberate conviction that scientific investigations regarding the effects of various drugs on the animal could not be regarded as satisfactory until we succeeded in discovering their effects on living organisms as a whole, including the plant.

I shall first demonstrate the similar physiological characteristics in vegetal and animal organisms, and next speak of the effects of various stimulating and depressing agents, such as a constant electrical current, various drugs, narcotics, and poisons, on the contractile, the conducting, and the rhythmic tissues of the plant. It will further be shown how the normal effect of a drug on the plant is profoundly modified by two other factors. The first of these is the influence of dose or strength of appreciation. The second factor of modification is the change induced in the tissue by the cumulative action of stimulus, in consequence of which the response of the organism undergoes a complete cyclic change. Consideration of these questions will probably throw much light on various anomalies met with in medical practice.

Assuming that plant tissues respond to the characteristic action of different drugs, yet the physiological change induced will elude our visual scrutiny. To take an extreme case, we find that it is impossible by mere inspection to distinguish between plant specimens one of which is alive and the other killed. We have then to discover means by which the plant itself is made to reveal its internal condition, and changes in that condition by characteristic signals recorded by it. Our success in devising such a method will enable us to determine whether a given drug causes an excitatory or depressing effect on the plant.

Plant Script.

As regards the possibility of revealing internal changes in the plant the conceivable way of doing so is by the detection and record of the response of the organism to a definite testing shock. If we can find out in the plant the relation between the stimulus or response we shall be able to determine its state of vitality at the moment. In an excitable condition the feeblest stimulus will evoke an extraordinarily large response; in a depressed state even a strong stimulus will evoke only a feeble response; and at the onset of death there is an abrupt end of the power to answer at all. Thus by means of testing blows we are able to make the plant itself reveal those invisible internal changes which would otherwise have entirely escaped us. We may, as we shall see, employ different methods of recording the response of the plant. The most evident is the method in which the answer is given in the form of mechanical movement.

Mechanical Response of Plant.

At the point in the leaf of the so-called sensitive plant, Mimosa, there is a cushion-like mass of tissue known as pulvinus. Under excitation the parenchyma in the more excitable lower half of the pulvinus undergoes contraction, in consequence of which there is a fall of the leaf. The sudden movement constitutes the mechanical response of the leaf. By the invention of different types of recorders I have succeeded in making the plant itself write an answering script to a testing stimulus, and in order that the results obtained should not be influenced by any personal factor arrangements have been made that the plant attached to the recording apparatus should be automatically excited by a stimulus absolutely constant, should make its own responsive record, going through its own period of recovery, and repeating the same cycle over again without assistance at any point on the part of the observer.

Similarities of Mechanical Response of Plant and Animal.

In the response of animal tissue it is found that a single stimulus, by itself ineffective, becomes effective upon repetition. The same is found to be the case in plant tissue. Thus, in a particular experiment, while an electrical stimulus of intensity 0·1 was singly ineffective, it became effective after being repeated 20 times. It is found, moreover, that this additive effect is, within limits, strictly quantitative. As in the case of the animal tissue, so also in Mimosa, the response is abolished at a sufficiently low temperature. With rise of temperature the amplitude of response is increased and the period of recovery shortened. The effect of load on the response of Mimosa is similar to that on the contractile response of muscle. In both, under increasing load, the height of response undergoes a progressive diminution, with shortening of the period of recovery. Within limits the amount of work performed by the muscle increases with the load. The same is true of the work performed by the pulvinus of Mimosa. The latent period is in general shorter under greater intensity of stimulus, the value becoming constant above a maximal stimulus. The shortest value in the pulvinus of Mimosa is 0·06 second, and I can show a pair of records giving a value of 0·109 second. A rise of temperature shortens the latent period. Under fatigue, on the other hand, the latent period is very much prolonged. When excessively tired the plant temporarily loses its power of response. In this condition the plant requires at least half an hour's period of absolute rest to regain its equanimity. In all these reactions we observe a remarkable parallelism with contraction phenomena in the muscle.

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[1] Abstract of a lecture delivered before the Royal Society of Medicine on Friday, Oct. 30th.

Death Spasm in Plants.

The electrical response of galvanometric negativity is abolished on the death of the plant. When the plant is subjected for a time to a temperature of 60° C. the electrical response disappears. This temperature is therefore fatal for most plants. In order to determine the exact death point I subjected Mimosa and various other plants to a gradual rise of temperature. This is attended by a progressive, expansive, or erectile movement; at the critical temperature of 60° C., however, the movement of expansion is suddenly reversed to a spasmodic excitatory contraction. The reversal takes place under standard conditions at or about 60° C.; after this the response of the plant is permanently abolished. The death-record is a V-shaped curve, the sharp point of inversion being the death-point. After death repetition of this experiment shows no further inversion. That this spasmodic contraction is a physiological phenomenon is further seen from the fact that the death point as determined from the inversion of the curve is lowered under physiological depression. Thus, fatigue will lower it to an extent depending upon the degree of fatigue. In a certain instance the death point, owing to fatigue, was lowered from the normal 60° C. to 37° C. Previous administration of dilute poison lowered the death point in another case by 18° C. Finally, I have shown that all excitatory reactions have as their concomitant a sudden electrical change, of a definite sign, and it is very significant that at the critical temperatare of 60° C. there occurs a sudden electrical discharge in the plant, the direction of the current being dependent on the differential excitabilities of the tissue.

Demonstration of Nervous Impulse in Plants.

The nervous character of impulse in plants has been demonstrated by me through various crucial tests. As in the case of the animal, so also in the case of the plant, the excitatory impulse may be arrested by the action of an electrotonic block. As long as the current is maintained so long is the impulse arrested; on the cessation of the blocking current, however, the conducting power is immediately restored. Local application of poison is found to arrest permanently the excitatory impulse through the poisoned tract.

Conducting Power of Nerve and its Variation.

We have seen how the physiological characteristics of the excitatory impulse in the plant are similar to those of nervous impulse in the animal. Under certain conditions the animal nerve undergoes changes leading to paralysis. In such a case a cure may sometimes be effected. The problem here is to impart to an ineffectively conducting tissue a better conducting power. This power of conduction or its absence is ultimately dependent on obscure molecular modifications. Discovery of parallel phenomena in the plant will undoubtedly prove of importance.

Induction of Artificial Paralysis and its Cure.

An interesting experiment relates to the artificial induction of temporary paralysis. When localised cooling is applied to a part of the petiole of Mimosa, the conduction of excitation through that portion becomes greatly delayed, till with sufficient cooling there is an actual block to the transmission of excitation. Thus it is possible by applying a fragment of ice to cause local paralysis of the conducting power of the petiole, which persists for over an hour, even after restoration of the tissues to the normal temperature. It is extremely suggestive that I was able under these conditions quickly to restore the conducting power by application of electrical shocks of moderate intensity to the paralysed region. Too strong a shock was, however, found to be highly detrimental.

Canalisation of Conducting Path.

In plant experiments I find a very significant result as regards the power of stimulus to fashion its own conducting path. Thus a plant carefully protected under glass from the stimulating buffets of the elements looks sleek and flourishing, yet as a perfect organism proves defective. Its conducting power is found to be in abeyance, though the motile organ exhibits its normal power of contraction. Anatomically the conducting elements are present, but from want of use they remain functionally inactive. Now in this condition it is very interesting to watch the growth of conducting power under the influence of stimulating blows. There is at first no transmission; after a time excitatory impulse begins to be initiated. Continued stimulation enhances the conducting power to a maximum. The concluding part of this process can be illustrated in the records.

Control of Nerve-conduction.

What is the change of the tissue which brings on paralysis? What is the molecular condition which confers conducting power on a nerve? These are very obscure problems, and any investigation calculated to throw light on the subject will undoubtedly prove of the highest importance, not only in theory, but also in practice. The nerve may have been rendered abnormal in two different ways. In one case it may have become extremely sluggish in transmitting an impulse. In the other case it may have become so hypersensitive as to transmit the feeblest excitation with intolerable intensity. In restoring the nerve to a normal condition we want to augment the conducting power in one case or arrest it in the other. A man who constantly uses the telephone has it in his power, by a simple process of switching on and off, to keep the circuit open or closed to the calls he receives, according as the message is pleasant or unpleasant. Can he similarly have the same control over the conducting system which exists within himself? Is it possible for him to augment or inhibit the nervous messages?

The phenomenon of excitation may be regarded as a process of molecular upset caused by stimulus, and the transmission of excitation as the propagation of the molecular disturbance. The phenomenon of molecular upset we may simply picture by means of a row of standing books. A certain intensity of blow applied, say, to the book on the extreme right would cause it to topple over to the left, hitting its neighbours and causing them to fall in succession. If the books have previously been slightly tilted towards the left, a disposition would have been given to them which, by facilitating the fall, would accelerate the speed of transmission. Conversely, an opposite disposition would retard or arrest the movement. Thus by means of a directive or polar force we may induce a molecular predisposition which would enhance or retard the speed of the disturbance according to the directive action, positive or negative, of the polar force. It may thus be possible to discover some polar force which, by inducing characteristic molecular dispositions, would enhance or retard the conduction in a nerve, according to the direction of the acting force.

So much for theory; its value must be judged by practical results. It may be briefly stated here that, acting on the principle that has been described, I have been successful in inducing at will and by turns two opposite molecular dispositions in the conducting tissue of the plant. When the polar force was maintained in a positive direction the speed of the excitatory impulse was enhanced in a remarkable manner. The nervous impulse could on the other hand be increasingly retarded, and finally arrested, by reversing the direction of the force and increasing its intensity. These *supra* or *a*-conducting states were maintained as long as the nerve was subjected to the action of the polar force acting in positive or negative direction.[2]

I have referred to the conducting tissue of the plant as a *nerve*. The use of this term has, I think, been justified by the remarkable similarities of reactions between the conducting tissues of the plant and animal under varied conditions. Perhaps the crucial test of a theory may lie in the power which it gives of predicting unknown phenomena, the predictions being afterwards fully verified. Believing in the identity of characteristics of plant and animal nerves, I applied the same polar forces which I found to be so effective in my plant experiments to the nerve of the frog, and it was a matter of intense gratification to me to find that by employing the same methods I could exalt or inhibit at will the conducting power of the experimental nerve. The importance of this investigation must be obvious to all. Its success further proves the importance of physiological investigation on plants in elucidating intricate problems of animal physiology.

Similarities between Rhythmic Pulsations in Plant and Animal.

In *Desmodium gyrans*, or the telegraph plant, the small lateral leaflets exhibit automatic pulsations. I find that the characteristics of the rhythmic tissues in the plant exhibit surprising similarities to those of the cardiac tissue in the animal. The down movement of the leaflet is quicker and corresponds to the systolic movement of the heart. The maximum rate of this down movement is 0·9 mm. per second. The diastolic or up movement is much slower, its maximum rate being 0·56 mm. per second. The pulsating activity of the detached heart of a frog can be maintained for long periods by subjecting it to intercardiac pressure. Similarly the activity of the detached leaflet of *Desmodium* can be renewed by the application of internal hydrostatic pressure, after which the pulsation can be maintained uniform for many hours. The cardiac tissue of the animal has a long refractory period. The tissue takes no account of the stimulus which falls within the refractory period. This is also characteristic of the response of the rhythmic tissue of *Desmodium*. Rhythmic tissues, animal and vegetable alike, are incapable of tetanus. The pulsating leaflet of *Desmodium*, like the pulsating heart, is more susceptible to excitation at diastole than at systole. An extra pulsation is induced in both by an induction shock, applied during the diastolic phase.

By the application of Stannius's ligature the pulsation of the heart is arrested at diastole. A similar arrest at diastole is found to take place in the pulsation of *Desmodium* by the application of a ligature immediately below the motile organ. The arrest takes place either at once or after one or two vigorous beats. Similar effects are also obtained by making a cut, after suitably supporting the leaflet. While the leaflet is in the condition of this arrest it is often possible to renew the pulsation by the stimulus of an electrical shock. The effect of lowering of temperature on the rhythmic pulsation of *Desmodium* is similar to that on the pulsation of a frog's heart. Lowering of temperature enhances the amplitude, but reduces the frequency of pulsation of both. A rise of temperature, on the other hand, causes enhanced frequency and diminished amplitude of pulsation. The pulsation of the beating heart may be inhibited by the stimulation of the vagus nerve. The rhythmic pulsation of *Desmodium* leaflets may similarly be inhibited by applying electrical stimulation at some distance from the pulsating organ.

Effect of Chemical Agents on the Response of Plant Tissue.

For this investigation a series of uniform responses is first obtained under uniform stimuli. After the application of the given agent another series of responses is once more obtained under the same stimuli as before. The variation of amplitude of response then gives an indication of the excitatory or depressing action of the agent. The plant is intensely susceptible to the impurities present in the air. The vitiated air of the town has a very depressing effect. According to popular science, what is death to the animal is supposed to be life for the plant; for does it not flourish in the deadly atmosphere of carbonic acid gas? In reality the plant gets suffocated just like a human being. Only in the presence of sunlight is this effect modified by photosynthesis. In contrast to the effect of carbonic acid, ozone renders the plant highly excitable. Sulphuretted hydrogen, even in small quantities, is fatal to the plant. Chloroform acts as a strong narcotic, inducing a rapid abolition of excitability. The ludicrously unsteady gait of the response of the plant under alcohol could be effectively exploited in a temperance lecture! Equally remarkable are the effects of drugs on rhythmic tissues of plants. As regards the action of ether, the effect of very diluted vapour is generally to induce a transient exaltation, followed by depression and arrest of pulsation. If the leaflet be subjected to strong vapour and if the application be prolonged the arrest is permanent. But if diluted vapour be employed and fresh air substituted immediately after the arrest, then there is a slow revival of pulsation. The effect of chloroform is similar to that of ether, its reaction, however, being far more toxic; a slight access in the application is attended by a permanent arrest of pulsation.

This and numerous other reactions exhibit the remarkable similarity in the effect of various chemical agents on the animal and vegetable tissues. A very striking characteristic is the antagonistic reaction of acid and alkali on the animal heart. Application of very dilute acid induces in the heart an atonic reaction, in consequence of which there is brought about an arrest of pulsation in the relaxed or diastolic condition. The action of dilute alkaline solution is the very reverse of this—namely, a tonic contraction and arrest in systole. I find these effects repeated in an astonishing manner in the pulsation of *Desmodium*. The internal application of dilute solution of lactic acid is seen to induce an arrest in a state of diastolic relaxation. The application of dilute NaHO solution, on the other hand, induces exactly the opposite effect—i.e., an arrest at systolic contraction.

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[2] The detailed account of this investigation has recently been communicated to the Royal Society.

Effect of Dose.

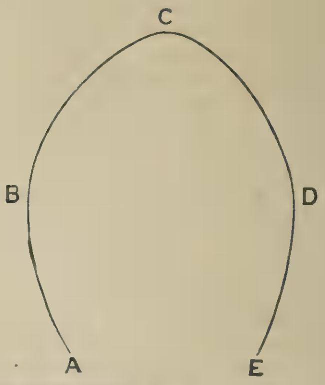
Another striking result that came out in my investigations on plant reactions is the modification of effect brought on by the strength of the dose. Thus, a poisonous reagent which caused depression or death was found to act as a stimulant when administered in minute quantities. As regards application of electrical current in medical practice, it is assumed that Pflüger's law, that it is the kathode that excites and anode that causes depression, is universally applicable. I find, however, that here too the strength of the current is a very important determining factor. Though the application of the anode causes depression with moderate currents, the reaction is completely reversed when the intensity of current exceeds a certain limiting value.

The Molecular Cycle.

We have seen how two precisely opposite results may be brought about by an identical drug or by an electrical current, owing to the varied strength of applications. There is, however, still another obscure factor which creates great perplexity. A given agent may cause a certain effect on one individual and an altogether different effect on another—"what is one man's meat is another man's poison." This difference is considered in some mysterious manner to be due to the varied constitutions of the individuals. As a concrete example I may cite the different reactions given by three batches of seedlings primarily similar. These were kept for some time under three distinct conditions and afterwards subjected to the action of a given dose of dilute poison. The first batch succumbed to the poison immediately; the second struggled for a time against it, recovered, and exhibited a moderate rate of growth afterwards. But the third batch was actually stimulated by the poison and demonstrated this by invigorated growth. Why should we find this difference? We must remember that the living tissue is not merely a mass of inert matter, but is a complexus of matter and energy held latent. The tissue may thus exist under widely different conditions, according as to whether it has been rendered active by the stimulating influence of its environment or reduced to a state of lethargy through being deprived of this. The source of stimulus here referred to includes every cause, internal or external, which brings about excitation. From the normal state of vigour the condition of the tissue may, according to circumstances, be carried to two opposite extremes—the state of inanition, through lack of stimulation, and the state of exhaustion through excess of stimulation. Between these two extremes are numerous gradations of tonic condition in the living tissue, these being determined by its past history; and it is impossible to predict what the answering reaction of the organism will be unless we know the exact position of the tissue in the scale of tonicity.

How then are we to obtain some measure of this obscure internal condition? There are two conceivable ways in which this could be attempted. One, by the study of outward posture or appearance of the organism; and second, by the character of its answers to testing shocks. A trained observer may be able to draw his inferences more or less accurately from outward appearances, but with plants we can depend on something more definite than this rule-of-thumb procedure. In the most favourable tonic condition of Mimosa, for example, the leaf is held out at a certain angle determined by the tonic contraction of the tissue. When the plant is kept completely isolated from all sources of stimulation it grows atonic, the tissue becomes relaxed, this being outwardly exhibited by the abnormally erect posture of the leaf. The plant is brought once more to a normal condition when subjected to the action of stimulus, the leaf once more occupying its normal outspread position. Under further stimulation the contractile movement reaches a limit, and when stimulation is carried to excess the contractile movement of fall is reversed into erectile movement of relaxation. If we had attached a recording lever we should have found a complete curve traced, something like Fig. 1.

FIG. 1.

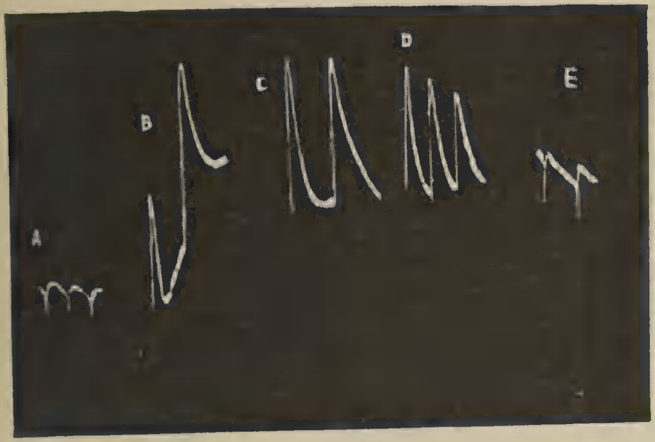


Characteristic cyclic curve showing growing contraction brought about by increasing stimulus from atonic A to C through subtonic B; subsequent reversal under over-stimulus, D moderate, E excessive fatigue.

In the study of this curve it should be remembered that on account of the method of record employed the up-movement of the leaf is shown by the descent of the curve and *vice versâ*. These outward manifestations are the expressions of internal molecular change of a physico-chemical character, and the cyclic curve representing the varied conditions of the tissue I shall refer to as the cyclic molecular curve. It will be seen from the diagram that a point in the ascending has a corresponding point in the descending curve. From this we can see how liable we are to draw a wrong inference from exclusive reliance on outward appearance or posture; for example, the parallel relaxed positions of A and E may have been brought on by two diametrically opposite conditions—i.e., extreme atonicity as at A, over-fatigue as at E. In order to restore the tissue to the normal the aim should be to bring it to the optimum condition C. For this diametrically opposed treatments are necessary, depending on the question of whether the tissue is at A or E condition. If it be at A stimulation is necessary, if at E rest or sedative treatment. But if we mistook E for A and applied further stimulation the case would have ended fatally through extreme exhaustion, while the other mistake would have been equally unfortunate for the plant, which would have met an untimely end through excessive inanition.

Turning next to the second method by which the changing condition of the tissue may be found from the progressive modification of replies to a testing stimulus, it is extremely interesting to find that corresponding to the molecular cycle which has been referred to there is a concomitant cyclic variation of response. In Fig. 2 I have given the characteristic responses of the tissue under varying molecular conditions typical of A, B, C, D, and E. I may say here that these results have been verified by experimenting on various kinds of tissues, the methods of investigation employed being so different as the electrical and the mechanical.

FIG. 2.



Typical responses under different molecular conditions, A, B, C, D, and E.

In describing the changes of response corresponding to changes in the molecular condition of the tissue, I shall for the sake of simplicity designate all normal response by contraction or by galvanometric negativity, as the *negative* response; its converse—i.e., response by relaxation or galvanometric positivity—will be termed *positive* response. Beginning with the case of extreme subtonicity corresponding to the point A in the cyclic curve, we find a maximum variation from the normal, the response being abnormally *positive*. Continued stimulation improves the general tone from a condition of relaxation to a growing tonic condition and converts abnormal positive to normal negative. At the phase corresponding to B the condition of subtonicity is moderate; stimulus removes the inertness and confers on it an increasingly better tone. Hence the characteristic response at this stage is a staircase enhancement culminating in the optimum condition C. The highest point of the molecular cycle is thus reached. Further stimulation, strong and long continued, completes the other half of the cycle, now of descent. During this descent the response at first undergoes a change from negative to less negative; that is to say, there is an appearance of fatigue. Again, under excessive stimulation the response may decline to zero, or even undergo a reversal to abnormal *positive*. As in the characteristic curve so also in the series of responses, the two halves of the cycle are so strangely alike, one being as it were the reflection of the other. The cycle begins with extreme subtonicity due to lack of stimulation and ends with exhaustion brought on by excessive stimulation. The starting-point of the one may be supposed to meet the end of the other in a common fatality. But though the one half thus mimics the other, there is as it were a polar difference between the two by reason of the difference in their past histories, necessitating treatment which must be diametrically opposite according as the tissue happens to occupy the beginning or end of the cycle.

Thus it is clear that the progress of medicine may be greatly facilitated when the attention of investigators is drawn to the importance of the molecular aspects of the phenomena with which they have to deal. Thus in examining the action of drugs a threefold question is seen to rise. It must first be determined what is the nature of the reaction induced by the given agent under normal conditions. The second matter of inquiry is what is the critical dose above and below which opposite effects are brought about? And finally, as the nature of the response is profoundly influenced by the position which the tissue then occupies in the curve of molecular cycle, it follows that the most important element in the application of a curative agent will be in the determination of the place of the tissue in the cyclic curve.[3]

I have given in this brief sketch accounts of various experiments which seem to bring the plant much nearer to us than we ever thought. We find that it is not a mere mass of vegetative growth, but that its every fibre is instinct with sensibility. We find it answering to outside stimuli, the responsive twitches increasing with the strength of the blow that impinges on it. We are able to record the throbbings of its pulsating life, and find these wax and wane according to the life conditions of the plant, and cease with the death of the organism. We have seen how the whole plant is made one by connecting threads, so that the tremor of excitation initiated in one place courses through the whole; and how this nervous impulse, as in man, can be accelerated or arrested under the several actions of drugs and poisons. In these and many other ways the life-reactions in plant and man are alike: thus through the experience of the plant it may be possible to alleviate the sufferings of man.

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[3] For complete account consult Bose's Plant Response (1906), Comparative Electro-Physiology (1907), and Researches on Irritability of Plants (1913), Longmans, Green, and Co.

EXETER CITY ASYLUM.—At the last meeting of the Exeter city council a considerable discussion took place in reference to the recent decision of the council that the medical superintendent of the city asylum should not engage in any private or consultative work. The matter was reported in THE LANCET of Oct. 31st. Eventually it was decided that the medical superintendent should be permitted to examine, when called in as a consultant, into the mental condition of any patient residing in Exeter.

A MONTHLY RECORD OF ATMOSPHERIC POLLUTION.

COMMITTEE FOR THE INVESTIGATION OF ATMOSPHERIC POLLUTION:

Summary of Reports for Month ending June 30th, 1914.

1	2	3	4	5	6	7	8	9	10	11	12
Place.	Correspondent.	Rainfall in millimetres.	Metric tons of deposit per square kilometre during month.								
			Insoluble matter.			Soluble matter.		Total solids.	Included in soluble matter.		
			Tar.	Carbonaceous other than tar.	Ash.	Loss on ignition.	Ash.		Sulphate as (SO_4).	Chlorine (Cl).	Ammonia (NH_3).
ENGLAND—											
Birmingham	Dr. J. Robertson, M.O.H.	54·36	0·2	4·48	11·76	1·96	4·7	23·1	2·36	1·20	1·36
Exeter	Mr. H. Lloyd Parry, Town Clerk.	32·50	0·07	1·78	2·83	0·83	1·04	6·55	0·45	0·098	—
Kingston-upon-Hull	Mr. A. R. Tankard, Public Analyst.	39·60	0·08	3·07	4·52	1·11	3·64	12·42	1·70	0·59	0·005
Liverpool	Dr. E. W. Hope, M.O.H.	38·02	0 46	2·26	8·93	1·37	3·27	16·29	2·07	0·35	0·16
London—											
Embankment Gardens ...	Mr. J. Ollis, Chief Officer, P.C.D.	34·00	0·24	4·52	7·31	0·90	3·31	16·28	1·38	0·32	0·07
Golden-lane	Dr. W. J. Howarth, M.O.H.	29·92	0·03	1·70	3·26	1·08	1·67	7·74	1·21	0·04	1·13
Meteorological Office ...	Director, THE LANCET Laboratory.	35·00	0·08	1·84	5·81	3·22	2·53	13·53	1·73	0·60	0 58
Malvern	Mr. W. Osborne Thorp, Surveyor and Waterworks Engineer, U.D.C.	73·00	0·01	0·24	0·38	0·88	1·32	2·83	0 74	0·23	0·03
Newcastle-on-Tyne	Dr. H. Kerr, M.O.H.	96 01	0·20	3·83	6·55	2·30	3·07	15·95	1·70	0·47	0·19
York...	Dr. Edmund M. Smith, M.O.H.	51·00	0·10	1·47	3·51	1·01	2·83	8·92	1·19	0·47	0·19
SCOTLAND—											
Greenock	Mr. James Devine, Sanitary Inspector.	25·00	0·05	2·06	3·88	0·74	1·17	7·90	0·71	0·13	0·03
Leith	Mr. Thomas Bishop, Sanitary Inspector.	18·19	0·76	19·20	35·87	21·82	7·27	84·92	8·26	5·08	1·39
Paisley	Mr. W. W. Kelso, Sanitary Inspector.	13·82	0·10	3·66	7·06	0·44	1·22	12·48	0·61	0 10	0·26
ENGLAND—	*Summary of Reports for Month ending July 31st, 1914.*										
Birmingham	Dr. J. Robertson.	99·0	0·20	4·80	12·20	1·40	5·70	24·30	2·60	0·80	0 20
Bolton	Dr. J. E. Gould.	135·0	0 09	2·16	4·75	5·43	5·43	17·86	3·35	1·19	0·06
Exeter	Mr. H. Lloyd Parry.	85·0	0·05	1·76	3·42	1·50	1·70	3·38	0·75	0·30	0·00
Kingston-upon-Hull	Mr. A. R. Tankard.	66·0	0·09	4·57	3 98	1 22	3·70	13·56	1·91	0·40	0·05
Liverpool	Dr. E. W. Hope.	103·0	2·55	2·37	9·41	4·72	5 34	24·39	3·63	0·95	0·31
Malvern	Mr. W. Osborne Thorpe.	80·0	0·01	0·33	0·37	0 80	0·96	2·47	0·56	0·35	0·05
Manchester—											
School of Technology ...	Mr. J. Warrington, Sec., Air Pollution Advisory Board.	105·0	0·15	4·47	9·20	2·77	7·74	24·33	3·87	2·03	0·15
Newcastle-on-Tyne	Dr. H. Kerr.	69·0	0·14	3·42	5·19	0·96	2·75	12·46	1·84	0·31	0·20
York	Dr. Edmund M. Smith.	116·0	0·08	1·30	1·61	1·39	3·24	7·61	1·27	0·50	0·54
London—											
Meteorological Office ...	Director, THE LANCET Laboratory.	38·0	0·02	0·77	2·74	2·58	1·68	7·81	1·57	0·40	0·74
Embankment Gardens ...	Mr. J. Ollis.	33·0	0·17	4·08	5·49	1·50	3·65	14·86	1·05	0·42	0·02
Golden Lane	Dr. W. J. Howarth.	36·0	0·04	2·66	3·86	1·02	2·61	10·17	1·51	0·44	0·13
Sheffield—											
Attercliffe Burial Ground	Prof. W. P. Wynne.	88·0	0·36	3·49	11·86	2·55	9·27	27·53	4·60	1·61	0·08
Hillsborough Park	"	54·0	0·47	0·29	2 20	0·52	3·44	6·92	1·62	1·53	0·05
Meersbrook Park	"	66·0	0·06	1·40	2 06	1·27	2·55	7·36	1·95	1·16	0·06
Weston Park	"	56·0	0·48	0·95	3·72	0·90	3 57	9·63	1·94	0·95	0·78
SCOTLAND—											
Greenock	Mr. James Devine.	41·0	0·05	2·01	4·00	1·89	2·00	9·94	1·49	0·14	0·09
Leith	Mr. Thomas Bishop.	60·0	0·07	1·44	2·63	0·94	2·20	7·28	1·13	0·15	0·12
Paisley	Mr. W. W. Kelso.	59·0	0·09	2·65	4·26	2·13	1·66	10·79	1·02	0·28	0·06
ENGLAND—	*Summary of Reports for Month ending August 31st, 1914.*										
Birmingham	Dr. J. Robertson.	55·0	0·10	2·50	7·50	0·90	3·20	14·20	1·70	0·30	0·10
Bolton	Dr. J. E. Gould, M.O.H.	89·0	0·20	2 94	6·15	2·49	6·41	18·02	3·66	0·49	0·06
Exeter	Mr. H. Lloyd Parry.	59·0	0·03	1·08	2·25	0·91	1 95	6 21	0·79	0·12	0·01
Kingston-upon-Hull	Mr. A. R. Tankard.	57·0	0·08	3·26	3·55	1·60	3·21	11·70	1·75	0·22	0·03
Liverpool	Dr. E. W. Hope.	58·0	0·08	1·63	6·52	2·68	4·90	15 81	2·86	0·37	0·24
Malvern	Mr. W. Osborne Thorpe.	36·0	0·01	0·25	0·45	0·43	0·87	2·01	0·47	0·13	0·03
Manchester—											
Cheadle	Mr. J. Warrington.	83·0	0·11	2·19	1·55	1·47	3·40	8·72	1·63	0·61	0·08
Davyhulme	"	64·0	0·02	0·81	0·82	0·56	2·06	4·26	1·38	0·28	0·06
Fallowfield	"	89·0	0·02	0·73	1·05	0·78	2·02	4·60	1·44	0·31	0·05
School of Technology ...	"	79·0	0·07	3·23	5·96	1·31	3·76	14·33	2·31	0 64	0·07
University...	"	71·0	0·09	1·74	3·03	0·79	1·75	7·40	1·17	0·39	0·07
Whitefield	"	101·0	0·05	1·28	1·89	0·98	4·47	8·66	2·52	0·47	0·06
Newcastle-on-Tyne	Dr. H. Kerr.	32·0	0·12	3·87	6·52	0·78	2·14	13·44	1 30	0·22	0·08
Oldham	Dr. J. B. Wilkinson, M.O.H.	92·0	0 16	3·25	8·26	1·84	5·53	19·04	1·48	0·59	0·16
York...	Dr. E. M. Smith.	39·0	0·11	1·89	3·67	0·78	2·32	8 79	1·04	0·27	0·25
London—											
Meteorological Office ...	Director, THE LANCET Laboratory.	28·0	0·03	1·69	2·27	1·33	3·46	8·80	1·72	0·40	0·19
Embankment Gardens ...	Mr. J. Ollis.*										
Golden Lane	Dr. W. J. Howarth.	31·0	0·03	1·36	2·37	0·99	2·35	7·09	1·44	0·36	0·10
Sheffield—											
Attercliffe Burial Ground	Prof. W. P. Wynne.	32·0	0·48	3·45	10·62	1·36	5·43	21·34	2·68	1·08	0·05
Hillsborough Park	"	32·0	0·36	0·74	3·01	0·89	2·36	7·36	1·18	0·58	0·03
Meersbrook Park	"	50·0	0·48	0·45	1·80	0·64	2·05	5·42	0·98	0·67	0·04
Weston Park	"	36·0	0·55	0·34	2·92	1·50	2·94	8 25	1·20	0·47	0·03
SCOTLAND—											
Greenock	Mr. James Devine.	120·0	0·03	1·64	2·69	1·80	2·39	8·54	1·03	0·21	0·06
Leith	Mr. Thomas Bishop.	43·0	0·10	1·76	4·27	0·44	2·21	8·78	1·03	0·10	0·06
Paisley	Mr. W. W. Kelso.	107·0	0·11	2·57	4·15	2·57	3·42	12·82	1·32	0·38	0·09

Col. 4 includes all matter insoluble in water but soluble in CS_2. Col. 5 includes all combustible matter insoluble in water and in CS_2. Col. 6 includes all earthy matter, fuel, ash, &c. One metric ton per sq. kilometre is equivalent to: (*a*) Approx. 9 lb. per acre; (*b*) 2·56 English tons per sq. mile; (*c*) one gramme per sq. metre; (*d*) 1/1000 millimetre of rainfall (see Col. 3).

* No returns to hand.

THE CLAIMS OF BRITISH SPAS.

(Continued from p. 1009.)

V.—Bath.

As far back as 1904 we suggested that the fact that the Bath waters were found to be radio-active might lead to a more satisfactory explanation of the favourable action of natural mineral waters in hydro-therapeutic practice, and further inquiry has abundantly shown that the suggestion was a sound one. A consideration of the chemical constituents of the thermal waters of Bath throws practically no light on the admitted therapeutic efficiency of a course of these waters. As Sir William Ramsay has pointed out, the recorded analyses of the Bath waters show, in the main, mere ordinary constituents, most of which are present in many drinking-waters. Sulphates of calcium, of sodium, of potassium, carbonates of calcium and magnesium, are all common substances. He adds that the only unusual constituents of Bath waters, so far as the analysis made at The Lancet Laboratory shows, are small quantities of strontium, of lithium, and a trace of bromine. Many mineral waters have for ages been used for curative purposes, and our present knowledge that such waters, while not remarkable in "chemical" composition, are all alike in yielding helium, the product of decay of radium, makes it particularly interesting to examine these waters for radium emanation or niton, as well as for radium itself.

The discovery of the radio-activity of the Bath thermal waters had its origin in the observation that helium is a product of the change of radium. The presence of helium in a water, in fact, implies either that radium is present in the water itself or that the water has been, at one period or another, in contact with radium. The figures subsequently arrived at by Sir William Ramsay are given according to the amount of radium with which the emanation or niton is in equilibrium. The amount of radium in the water of the King's Spring represents only about 1/470th part of a grain in something like 200,000 gallons (0·1387 milligramme per million litres). The niton, however, is present in much greater quantity (1·73 milligramme per million litres). The gas coming from the water contains much more niton than the water itself, so that the water must hold as much as it can at the high temperature at which it emerges (120° F.). The amount of niton in the disengaged gases is that which would be in equilibrium with 33·65 milligrammes of radium in a million litres of water.

Bath, therefore, appears to possess the richest radio-active waters in the country, and it remains to consider what significance this fact possesses in regard to their therapeutic action. There seems to be little doubt, at all events, that whether administered by the skin, as in immersion, or by respiration, as must happen also during the immersion, radio-active energies act directly by improving the processes of nutrition and metabolism. Enzymic activity is promoted and oxidation processes are stimulated to a more complete stage. There is thus produced a higher excretion of urinary solids apart from chlorides, and there is frequently observed a considerable multiplication of red blood cells. In regard to the bactericidal effects of emanation it is interesting to note that the treatment of gonorrhœal arthritis at Bath meets with conspicuous success, which would seem to indicate a destructive action upon gonococci. The opinion, however, of medical men familiar with the hydro-therapeutic practices at Bath is that a definite contra-indication of radium therapy is in tuberculous conditions. Chronic nephritis falls into the same category. The question of contra-indication is clearly decided by what appears to be the main effect of radio-active treatment, which is primarily a stimulation of metabolism. The dosage can be increased at Bath to an almost unlimited extent by supplementing treatment by immersion with the use of vapour sprays for inhalation. A special radium inhalatorium has been installed suitable for this treatment, and the results are most encouraging.

The reputation of Bath has, however, been founded chiefly upon the undoubted benefit which a course of treatment there has conferred upon sufferers from gout in all its forms, chronic articular rheumatism, muscular rheumatism, rheumatoid arthritis, sciatica, and so on. The general experience in these directions teaches that in affording relief to such conditions Bath is in no sense inferior to the spas abroad which have established similar claims.

Amongst other cases which benefit at Bath are certain disorders of the digestive organs, muco-membranous colitis, chronic gastric catarrh, diseases of the skin, anæmia and chlorosis, ailments of women, and tropical infections.

Outside the indications for treatment with the natural thermal and radio-active waters the Bath corporation have provided a remarkably complete installation of auxiliary appliances in the shape of electric hot-air baths, hydro-electric baths, Nauheim treatment, and sulphur and other medicated baths. There are also provided medico-mechanical exercises for joints and muscles on the Zander system. Lastly, the radio-active waters of Bath give excellent results in the treatment of muco-membranous colitis by means of the intestinal or Plombières douche.

The programme of social attractions, recreation, and amusements reflects great credit upon the authorities at Bath, who have established a well-organised and equipped inquiry office where visitors can obtain complete information from day to day as to these important diversions from a course of treatment. There is a magnificent music chamber situated in the building of the Grand Pump Room itself, and the talent provided is of a really high order. The situation of the city is picturesque and attractive, and the shelter afforded by the beautiful hilly country on all sides renders its climate mild and equable. This fact is specially appreciated in the autumn and winter. The architectural beauties of the city's buildings, streets, and squares are well known. The history of Bath as a bathing station of course goes back a long way, and the excavations that have been made in recent years disclosing beautiful Roman designs and construction are of great interest. The remains of the Roman thermæ are quite extensive, and here and there in a well-preserved state, bearing decided evidence of the importance attached to the waters of Bath by the Romans. Coming to later times, the city enjoyed a great vogue amongst distinguished people early in the eighteenth century, but since that date the development of the bathing establishments has proceeded rapidly on scientific lines, which should make Bath a formidable competitor to continental enterprise. Some idea of the extent of the provision demanded for the supply of the radio-active mineral water to the various baths, douches, and sprays may be gained from the fact that in these places there are close upon 1000 taps, while the pipes for the whole service would, if extended continuously, reach a length of no less than 40 miles.

(*To be continued.*)

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

MEETING OF COMITIA.

A COMITIA was held on Oct. 29th, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The following gentlemen having passed the required examination were admitted Members of the College: Philip Heinrich Bahr, M.B. Cantab., L.R.C.P.; Vraspillai Gabriel, L.R.C.P.; Alfred Howell, M.D. Lond., L.R.C.P.; Ernest Rivaz Hunt, M.D. Cantab., L.R.C.P.; Hugh Basil Greaves Newham, L.R.C.P.; and James Herbert Rhodes, M.B. Lond., L.R.C.P.

Licences to practise physic were granted to 67 gentlemen who had passed the requisite examinations.

The following communications were received: 1. From the secretary of the Royal College of Surgeons of England, dated Sept. 24th and Oct. 9th, reporting proceedings of the Council of that College on Sept. 24th and Oct. 8th respectively. The second letter reported that Mr. J. D. M. Cardell had been appointed the twenty-second Jenks scholar. 2. From the Registrar of the General Medical Council, dated Sept. 24th, concerning the maintenance of the minimum medical curriculum during the present national emergency. 3. From Mr. Oswald Sickert, dated Sept. 10th, asking leave to reproduce a photograph of the portrait of Dr. John Arbuthnot in connexion with an illustrated encyclopædia. The request was granted. 4. From Sir R. Douglas Powell presenting to the College a photograph of the painting by Yeames of Harvey at the Battle of Edgehill. The gift was accepted with the thanks of the College.

It was resolved that the President of the College should become, *ex officio*, a member of an Advisory Board to the National Council for Combating Venereal Diseases.

A further report was received from the Censors' Board concerning restrictions in the sale of opium and other narcotics. The Board recommended that Clause 4 of their original report, which clause was referred back to the Board at the quarterly July Comitia, should read as follows:—

> 4. That with regard to prescriptions which, when fully made up, contain 1 per cent. (1 grain in 110 minims, which is approximately 4·5 grains to the fluid ounce) or more of the alkaloids in question, and in the case of every preparation intended for subcutaneous use, the doctor should state in his prescription the number of doses to be supplied. The prescription should not be dispensed more than once unless at each renewal it is fully signed and dated by a qualified medical practitioner.

The report was adopted.

Dr. J. A. Ormerod was re-elected a member of the Committee of Management.

A report, dated Oct. 15th, from the Committee of Management was received and adopted. The report stated that the committee had had under consideration the existing regulation to the admission to the Final Examination of students of colonial, Indian, and foreign universities recognised by the Board. It was considered that the present requirement was a hardship, and the committee recommended that Clause IV. should be altered to read as follows:—

> IV. Members of colonial, Indian, or foreign universities who shall have passed such an examination or examinations at their universities for the degree of Doctor or Bachelor of Medicine or Surgery as shall comprise the subjects of the First and Second Examinations of the Examining Board in England, and who shall have completed the curriculum of medical study required by the Regulations of the Board, will, two years after having passed such examinations, be eligible for admission to the Third or Final Examination of the Board; any candidates so admitted to examination will be required to pay a fee of twenty guineas, and any such candidates who shall have passed the Third or Final Examination shall, on the further payment of not less than twenty guineas, and subject to the by-laws of each College, be entitled to receive the Licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England.

The quarterly report of the College Finance Committee was received and adopted. Amongst other matters it was mentioned that the committee recommended that the College should contribute 200 guineas to the Prince of Wales's Fund for relief of distress caused by the war.

After some further formal business the PRESIDENT dissolved the Comitia.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Staff-Surgeon: E. M. W. Hearn to the *Vivid*, additional, for the *Reliance*. Temporary Surgeons: E. M. Thompson to the *Vivid*, additional, for War College, Devonport; J. C. Baggs and H. T. Depree, both to the *Vivid*, additional, for Plymouth Hospital; J. D. Clarke, D. Flack, and K. Wolferstan, all to the *Pembroke*, additional, for disposal; G. C. Scott to the *Wildfire*, additional, for disposal; J. A. Watson, H. Hemsted, and P. W. Carruthers, all to the *Victory*, additional, for Haslar Hospital; and R. N. McKinstry to the *Victory*, additional, for disposal.

ROYAL NAVAL RESERVE.

In accordance with the Regulations for Royal Naval Reserve, Lieutenant William George Lewin has been placed on the retired list (dated Oct. 7th).

The undermentioned Acting Surgeons have been confirmed in the rank of Surgeon in His Majesty's Fleet:—Arthur Edward Panter, Henry Brice Parker, Julian Lionel Priston, Richard Frith Quinton, Mark James Aitken, Joseph Archibald Maxwell, Maurice Sydney Moore, William Glossop Thwaytes, Clarence Edward Greeson, William Forbes Beattie, Herbert Wyndham Fitzroy-Williams, Francis Edmund Fitzmaurice, Timothy Joseph O'Riordan, James Cecil Kelly, James Mulvihill Horan, Gilbert Malise Graham, and Frank Cornwell Hunot.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon: W. J. A. Quine to the *Vivid*, additional, for disposal, vice McDowell.

ARMY MEDICAL SERVICE.

The undermentioned to be temporary Colonels:—Dated Oct. 10th: Lieutenant-Colonel Sir Wilmot P. Herringham, 1st London (City of London) General Hospital, Royal Army Medical Corps, Territorial Force; Sir Almroth E. Wright, F.R.S.; Captain Frederic F. Burghard, 4th London General Hospital, Royal Army Medical Corps, Territorial Force; and Major Sir John Rose Bradford, K.C.M.G., F.R.S., 3rd London General Hospital, Royal Army Medical Corps, Territorial Force.

To be temporary Lieutenant-Colonel:—Dated Oct. 21st: Willie Netterville Barron, M.V.O.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Robert Caldwell is retained on the active list under the provisions of Article 120, Royal Warrant for Pay and Promotion, 1913, and to be Supernumerary (dated Oct. 30th).

The undermentioned Captains to be Majors:—Dated Oct. 31st: John G. Bell, Frederick W. W. Dawson, Joseph E. H. Gatt, Thomas S. Coates, James C. G. Carmichael, Roland H. Bridges, James A. W. Webster, Francis C. Lambert, Reginald C. Wilmot, Harry B. Kelly, Edward M. Pennefather, Benjamin H. V. Dunbar, David Ahern, Donald G. Carmichael, John M. M. Crawford, Thomas E. Harty, John H. Duguid, Burnet G. Patch, and Geoffrey W. G. Hughes.

The undermentioned to be temporary Lieutenants:—Dated Oct. 10th: John Henderson, Lawrence Fielder Hemmans, and William Baxter. Dated Oct. 12th: Tremlett Brewer Batchelor, Noel Anthony Coward, Lionel Palliser Costabadie, John Davidson, Ranald Montague Handfield-Jones, John George Ingouville, Michael John Mulligan, Michael Murphy, George Wardlaw Milne, Humphrey Neame, Vivian Morris Rich, Edward Llewellyn Noott Rhodes, George Thom, John Tichborne, George Wishart Will, and Trevor Owen Williams. Dated Oct. 13th: Adam Gray and William Guy Lidderdale. Dated Oct. 14th: Thomas Renton Elliott. Dated Oct. 15th: Frank Arthur Grange, John Davis Lithgow, James Anstruther Smith, and Malcolm Winfrid Shutte. Dated Oct. 16th: John Westcott Dew. Dated Oct. 17th: John Henry Dyke Acland, Henry Albert Ehrlich, Alexander Fleming, and Robert Charles Irvine.

The undermentioned Cadets and ex-Cadets of the Officers Training Corps to be Lieutenants (on probation):—Dated Oct. 15th: Harold Armstrong Crouch and Francis Augustus Roddy. Dated Oct. 20th: Charles Arthur Mason.

The undermentioned to be Lieutenants (on probation):—Dated Oct. 14th: Donald Charles Scott. Dated Oct. 16th: Wilfrid Burton Wood and Herbert Stewart Milne. Dated Oct. 17th: John Sandys Pooley. Dated Oct. 19th: Quentin Vaughan Brooke Wallace, Gilbert Aberdein Harvey, and William Howard Nicholls.

Charles E. L. Burman relinquishes his temporary commission (dated Oct. 13th).

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officers of the Indian Medical Service:—

Colonel to be Surgeon-General:—Dated April 1st, 1912: George Francis Angelo Harris, C.S.I. Lieutenant-Colonel to be Colonel:—Dated April 1st, 1912: Francis James Drury. Lieutenants to be Captains:—Dated Jan. 28th: John Scott and George Selby Brock. Dated April 23rd: Kanwar Indarjit Singh, Krishnan Gopinath Pandalai, and Charles Albert Wood.

The provisional promotions to the rank of Captain of the following officers are confirmed:—William Haywood Hamilton (dated Feb. 1st, 1908), John Francis Boyd (dated Sept. 1st, 1908), and Percy Strickland Mills (dated Feb. 1st, 1909).

CHANNEL ISLANDS MILITIA.

Medical Corps.

Surgeon-Captain Arthur C. Stamberg to be Surgeon-Major (dated Oct. 18th).

TERRITORIAL FORCE.

Army Medical Service.

Major Gerald C. Taylor, from the list of officers, Sanitary Service, Territorial Force, to be Deputy Assistant Director of Medical Services, 2nd Mounted Division, Central Force. Lieutenant-Colonel R. R. Sleman, 1st London (City of London Field Ambulance) Royal Army Medical Corps, Territorial Force, is granted the local rank of Colonel whilst serving at Malta.

Royal Army Medical Corps.

Major James G. McNaught to be Lieutenant-Colonel, vice R. Caldwell, supernumerary. Lieutenant Donald Armour, Royal Army Medical Corps, Special Reserve, to be granted temporarily the honorary rank of Lieutenant-Colonel. William Netterville Barron, M.V.O., to be a temporary Lieutenant-Colonel. Alexander Gordon Paterson is granted temporarily the honorary rank of Major.

1st London General Hospital: The undermentioned Captains to be seconded: William B. Ainger, Herbert D. Clementi-Smith, and George H. L. Whale.

4th London General Hospital: Captain Frederic F. Burghard is seconded.

1st Southern General Hospital: Frank Douglas Marsh (late Cadet, Cambridge University Contingent, Senior Division, Officers Training Corps) to be Captain, whose services will be available on mobilisation.

2nd Northern General Hospital: Major Joseph F. Dobson to be Lieutenant-Colonel.

3rd Northern General Hospital: Captain George H. Pooley to be Major.

1st London (City of London) Field Ambulance: Captain Charles S. Brebner to be Major (temporary).

2nd London (City of London) Field Ambulance: Major William Vernor Sinclair (formerly Royal Army Medical Corps, Special Reserve) to be Major. Ernest Urquhart Bartholomew (late Captain, Special Reserve) to be Major.

3rd London (City of London) Field Ambulance: James Leonard Octavius Tilley to be Lieutenant.

6th London Field Ambulance: Captain John W. Bird (from the Territorial Force Reserve) to be Captain.

5th London Field Ambulance: Major Mowbray Taylor, Retired List, Volunteer Force, to be Major.

1st South Midland Field Ambulance: Henry Philip Thomason to be Lieutenant.

2nd South Midland Field Ambulance: Lieutenant Cyril R. Wallace, from 1st South Midland Field Ambulance, to be Lieutenant.

3rd South Midland Field Ambulance: Lieutenant Charles E. K. Herapath to be Captain.

2nd South Midland Mounted Brigade Field Ambulance: Humphrey Francis Humphreys to be Lieutenant.

1st North Midland Field Ambulance: Captain Henry G. W. Dawson to be Major (temporary). Geoffrey Holmes to be Lieutenant.

1st Lowland Field Ambulance: The undermentioned to be Lieutenants: Arthur William Sutherland, George Balfour Eadie, and Percival John Moir.

2nd Lowland Field Ambulance: Quartermaster and Honorary Lieutenant James Law, from the Lowland Clearing Hospital, to be Quartermaster, with the honorary rank of Lieutenant.

3rd Lowland Field Ambulance: William Wells Greer to be Lieutenant.

Lowland Mounted Brigade Field Ambulance: Andrew Morton Young to be Lieutenant.

2nd West Riding Field Ambulance: Francis William Begg to be Lieutenant.

3rd West Riding Field Ambulance: Donald Sargenson Twigg to be Lieutenant.

3rd Welsh Field Ambulance: William Rutherford and George Young to be Lieutenants.

1st Wessex Field Ambulance: The undermentioned Captains to be Majors: Thomas Duncan and George P. D. Hawker. Lieutenant William H. E. Stewart, from Attached to Units other than Medical Units, to be Captain.

2nd Wessex Field Ambulance: The undermentioned Captains to be Majors: Fielding C. Whitmore and Thomas P. Puddicombe.

3rd Wessex Field Ambulance: Major Alexander Milne-Thomson to be Lieutenant-Colonel. Captain Edmund Alderson to be Major. Charles Balfour Stewart to be Lieutenant.

South Wales Mounted Brigade Field Ambulance: Arthur Malsen Deane (late Lieutenant, 2nd West Riding Brigade, Royal Field Artillery) to be Lieutenant.

1st East Anglian Field Ambulance: Harry Whitaker to be Lieutenant.

3rd East Anglian Field Ambulance: George Hastie Harper-Smith to be Lieutenant.

2nd Highland Field Ambulance: George Spencer Melvin to be Lieutenant.

2nd Home Counties Field Ambulance: James William Cairns to be Lieutenant.

1st West Lancashire Field Ambulance: William Evans Graham to be Lieutenant.

4th (Cumberland and Westmorland) Battalion, The Border Regiment: Lieutenant Norman Maclaren resigns his commission.

1st London (City of London) Sanitary Company: Samuel Reginald Orme Dudfield to be Captain.

2nd London Sanitary Company: Arthur George Atkinson to be Lieutenant.

Sanitary Officers: William McConnel Wanklyn to be Captain.

Sanitary Service: James Albert Gibson to be Captain.

Attached to Units other than Medical Units.—Lieutenant-Colonel and Honorary Surgeon-Colonel Charles H. Gwynn resigns his commission, and is granted permission to retain his rank and wear the prescribed uniform. To be Majors: Captain John Livingstone, Captain Frederick N. Grinling, Captain William F. McAllister-Hewlings, Captain William S. Griffith, and Edward Thomas Vint. To be Captains: Lieutenant Alexander D. Kennedy, Lieutenant Francis V. Denne, Captain George Potts, from the 1st Home Counties Field Ambulance, Harold Christopher Simpson (late Lieutenant 9th (Highlanders) Battalion, The Royal Scots (Lothian Regiment)) Lieutenant James L. Brownridge, and Lieutenant Alexander P. Watson. To be Lieutenants: George Shaw Glass, William Dale (late Lance-Corporal, London University Contingent, Senior Division, Officers Training Corps), Robert Unwin Moffat, C.M.G., Archibald Oliver, William Ernest Fitzgerald, John Ernest Pearce, Stanley Hodgson, Pierce Nagle Creagh, Herbert Edward Murray, Norman Maclaren (late Lieutenant 4th (Cumberland and Westmorland) Battalion, The Border Regiment), Arthur Christopher Watkin (late Second Lieutenant 4th Battalion, The King's (Shropshire Light Infantry)), Stephen Ormond Dolan, Arthur Edwin Bullock, and Frank Rex Fletcher.

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Lieutenant Robert Steele Young, from 1st East Lancashire Field Ambulance, to be Lieutenant.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8529 births and 4708 deaths were registered during the week ended Saturday, Oct. 31st. The annual rate of mortality in these towns, which had been 13·9, 13·4, and 13·8 per 1000 in the three preceding weeks, fell in the week under notice to 13·5 per 1000 of their aggregate population, estimated at 18,120,059 persons. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 13·7, against 14·1 per 1000 in the metropolis. Among the several towns the death-rate last week ranged from 4·7 in Hornsey, 5·1 in Exeter, 5·3 in Darlington, 5·7 in Ilford, 6·3 in Cambridge, and 7·3 in Ealing, to 20·4 in Liverpool, 20·5 in Gateshead, 20·8 in Newcastle-on-Tyne, 22·3 in Middlesbrough, and 24·7 in Bury.

The 4708 deaths from all causes were 80 fewer than the number in the previous week, and included 472 which were referred to the principal epidemic diseases, against 529 and 540 in the two preceding weeks. Of these 472 deaths, 204 resulted from infantile diarrhœal diseases, 123 from measles, 61 from diphtheria, 38 from scarlet fever, 32 from whooping-cough, and 14 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·4, against 1·6 per 1000 in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had steadily declined from 1223 to 269 in the six preceding weeks, further fell to 204 last week, of which 44 were registered in London, 19 in Liverpool, 14 in Birmingham, 11 in Manchester, 10 in Newcastle-on-Tyne, 8 in Stoke-on-Trent, and 8 in Sheffield. The deaths referred to measles, which had been 73, 67, and 101 in the three preceding weeks, further rose to 123, and caused the highest annual death-rate of 1·7 in Wigan and in Newcastle-on-Tyne, 1·8 in Liverpool, 2·0 in Wakefield, and 2·3 in Birkenhead. The fatal cases of diphtheria, which had been 57, 59, and 79 in the three preceding weeks, fell to 61 last week, and included 20 in London, 6 in Birmingham, 4 in Manchester, 3 in Liverpool, and 2 each in Leyton, Northampton, and Great Yarmouth. The deaths attributed to scarlet fever, which had been 31, 29, and 37 in the three preceding weeks, were 38 last week, of which 10 occurred in London, 7 in Manchester, 4 in Liverpool, and 2 each in Birmingham, Preston, and Leeds. The deaths referred to whooping-cough, which had declined from 50 to 35 in the four preceding weeks, further fell to 32 last week, and included 6 in London, 4 in Liverpool, and 2 in Nottingham. The fatal cases of enteric fever, which had been 17, 14, and 19 in the three preceding weeks, fell to 14 last week, of which 4 occurred in London and 4 in Hull.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 3071 to 4617 in the ten preceding weeks, had further risen to 4683 on Saturday last; 598 new cases were admitted during the week, against 670, 650, and 657 in the three preceding weeks. These hospitals also contained on Saturday last 1505 cases of diphtheria, 69 of enteric fever, 54 of whooping-cough, and 47 of measles, but not one of small-pox. The 1224 deaths from all causes in London were 49 fewer than in the previous week, and corresponded to an annual death-rate of 14·1 per 1000. The deaths referred to diseases of the respiratory system, which had increased from 110 to 191 in the six preceding weeks, further rose to 197 in the week under notice, and were 19 in excess of the number registered in the corresponding week of last year.

Of the 4708 deaths from all causes in the 97 towns, 215 resulted from different forms of violence and 367 were the subject of coroners' inquests, while 1409 occurred in public institutions. The causes of 29, or 0·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Sheffield, Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, and in 77 other smaller towns. Of the uncertified causes of death, 9 were registered in Birmingham, 6 in Liverpool, and 4 in Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1127 births and 640 deaths were registered during the week ended Saturday, Oct. 31st. The annual rate of mortality in these towns, which had been 15·9, 14·7, and 15·0 per 1000 in the three preceding weeks, declined to 14·6 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 15·1, against 13·7 per 1000 in the 97 large English towns. Among the several towns the death-rate last week ranged from 6·8 in Hamilton, 7·6 in Motherwell and in Kirkcaldy, and 10·1 in Dundee, to 15·0 in Leith, 15·7 in Aberdeen, and 16·5 in Glasgow.

The 640 deaths from all causes were 19 fewer than the number in the previous week, and included 78 which were referred to the principal epidemic diseases, against numbers declining from 96 to 80 in the three preceding weeks. Of these 78 deaths, 26 resulted from infantile diarrhœal diseases, 16 from diphtheria, 14 each from scarlet fever and whooping-cough, 5 from enteric fever, and 3 from measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·8, against 1·4 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 54, 29, and 31 in the three preceding weeks, fell to 26 last week, of which 14 were registered in Glasgow, 5 in Aberdeen, and 2 in Edinburgh. The deaths referred to diphtheria, which had increased from 4 to 19 in the six preceding weeks, fell to 16 last week, and included 6 in Edinburgh, 4 in Glasgow, and 3 in Aberdeen. The fatal cases of scarlet fever, which had increased from 6 to 16 in the six preceding weeks, fell to 14 last week; 7 deaths occurred in Glasgow, 3 in Aberdeen, and 2 in Leith. The deaths attributed to whooping-cough, which had been 8, 10, and 9 in the three preceding weeks, rose to 14 last week, of which 9 were recorded in Glasgow and 2 in Paisley. The 5 deaths referred to enteric fever, of which 3 occurred in Glasgow, were equal to the average in the three preceding weeks. Of the 3 fatal cases of measles 2 were recorded in Glasgow and 1 in Dundee.

The deaths referred to diseases of the respiratory system, which had steadily increased from 62 to 89 in the six preceding weeks, further rose to 92 in the week under notice; 17 deaths resulted from various forms of violence, against 29 and 21 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 592 births and 352 deaths were registered during the week ended Saturday, Oct. 31st. The annual rate of mortality in these towns, which had been 15·4, 16·2, and 15·8 per 1000 in the three preceding weeks, fell to 15·2 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 15·7, against corresponding rates of 13·7 and 15·1 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 14·4 in Dublin (against 14·1 in London and 16·5 in Glasgow), 14·0 in Belfast, 21·8 in Cork, 11·4 in Londonderry, 21·7 in Limerick, and 22·8 in Waterford, while in the 21 smaller towns the mean death-rate was 15·4 per 1000.

The 352 deaths from all causes were 13 fewer than the number in the previous week, and included 51 which were referred to the principal epidemic diseases, against 57 and 44 in the two preceding weeks. Of these 51 deaths, 19 resulted from infantile diarrhœal diseases, 12 from scarlet fever, 7 from measles, 5 from diphtheria, and 4 each from enteric fever and whooping-cough, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·2, against 1·4 and 1·8 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily declined from 74 to 21 in the six preceding week, further fell to 19 last week, of which 7 were registered in Dublin, 6 in Belfast, and 2 in Cork. The deaths referred to scarlet fever, which had been 4, 7, and 5 in the three preceding weeks, rose to 12 last week, and comprised 4 in Waterford, 3 each in Belfast and Limerick, and 2 in Dublin. The 7 fatal cases of measles, comprising 6 in Belfast and 1 in Dublin, were equal to the number in each of the two preceding weeks. Of the 5 deaths attributed to diphtheria, 2 occurred in Kilkenny. The 4 deaths referred to whooping-cough were 2 below the average in the three preceding weeks, and included 3 in Cork and 1 in Belfast. Of the 4 fatal cases of enteric fever, 2 occurred in Dublin, and 1 each in Belfast and Ballymena.

The deaths referred to diseases of the respiratory system, which had been 56, 71, and 60 in the three preceding weeks, were 61 in the week under notice. Of the 352 deaths from all causes, 122, or 35 per cent., occurred in public institutions, and 6 resulted from different forms of violence. The causes of 15, or 4·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes last week did not exceed 0·6 per cent.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: NEW CALENDAR.—A new edition of the Calendar of the Royal College of Surgeons of England has just been published. The Calendar contains a full statement of the number of candidates who were admitted to examination during the collegiate year to the Fellowship, to the first, second, and third examinations, and to the examination for the Licence in Dental Surgery respectively, together with the results of the several examinations. The Fellows of the College number 1641, the oldest of whom are Mr. Richard Barwell and Mr. Thomas Bryant, who both qualified as Fellows on May 12th, 1853. The Members' list contains 17,161 names, and the Licentiates in Dental Surgery 2635. Particulars of the various College prizes are included in the Calendar, and for the first time details are given of the Blicke Bequest "for the purchase of books for the library for ever." The first award of the Sir Gilbert Blane Medal under the revised regulations was made during the year to "the medical officer who obtained the highest aggregate marks at the examination to the rank of staff surgeon." The Calendar states that a clock for the Common Room for Fellows and Members has been presented by Mrs. M. F. King in memory of her father, the late Mr. W. C. B. Fifield, M.R.C.S., of Boston, U.S.A. It is to be noted that Mr. Frederic G. Hallett, the secretary to the Examining Board, has been given the title of Director of Examinations.

PARIS.

(From our own Correspondent.[1])

The Unforeseeable.

All the preparations of the French Medical Service with regard to the organisation of ambulance work and attendance on the wounded have been upset by the unforeseeable methods of the enemy in systematically firing on the ambulances, killing medical officers and nurses, and abandoning the wounded on the field of battle. It has accordingly been necessary to modify all our arrangements, which had been planned with a view to more modern and humane methods in warfare. Dressing stations near the firing line, collecting stations, ambulances, field hospitals, admirably organised transport for the wounded, the material of various sanitary stations provided abundantly with serums and radiographic apparatus—all might have been considered perfectly organised. But under the methods of our foes it became no longer possible to attempt to succour the wounded and, after furnishing first aid, to remove them promptly out of the battle area. A horrible condition of affairs has resulted because the entire equipment was provided for a different and more humane method of warfare. The hospital trains, so admirably equipped, in which the wounded, comfortably settled and attended by an adequate ministering personnel, would have been transported from the collecting stations to the field hospitals, have but rarely been able to render the aid one had a right to expect from them, because of the impossibility of finding them when needed in the vicinity of the fighting line with a number of conveyances adequate to the number of wounded to be removed at one time. Consequently, trains returning empty from revictualling the troops, which with admirable organisation proceed daily to the neighbourhood of the field of battle, have had to be made use of. The wounded, dressed at the field ambulances, have been piled into these trains, and it is on the échelon of railway dressing stations in the line of communications that the task has devolved of readjusting the dressings, and in the case of the wounded unable to continue the journey of diverting them to the field hospitals, there to complete the work which could only be hastily done by the ambulance. These field hospitals are always exposed to the necessity of advancing or retiring in accordance with the movements of an enemy to whose tender mercies it is highly imprudent to abandon the wounded. Naturally these railway dressing stations, intended only for a stay of a few moments by the hospital trains provided with every requisite, have had to perform a herculean task under very inadequate conditions. Little by little the personnel and material of these stations have been adapted to the new situation. The supply trains, in view of conversion on their return into extemporised hospital trains, have carried with them the personnel and material of the Medical Service. The railway dressing stations have been enlarged and provided with more complete and comfortable equipment. Now great progress has been made. The use of straw for the wounded to lie on has been long forbidden. They are placed on stretchers when they cannot sit in the railway carriages; they are provided with sufficient covering, and a hospital attendant stays in each wagon. Moreover, all the railway companies are devoting their attention to this matter. The Compagnie de l'Est has recently established a hospital train supplied with heat in all the carriages and having a communicating corridor, gas lighting, a dressing-room, water closets and lavatories, and placed on bogies. This train has been presented to a committee composed of the highest medical authorities, and others are being established.

Tincture of Iodine and the Army.

The bullet when it finds its mark is aseptic, and when it strikes direct creates a wound like that of a surgical knife, but this wound becomes invaded with great rapidity by pathogenic microbes, either from the earth or from the skin itself. The skin of soldiers who frequently are fighting for days and nights together without taking off their clothes is naturally dirty and septic. From the skin these microbes enter the wound and infect it deeply in a few hours. Swabbing the infected skin with tincture of iodine suffices to secure asepsis, but that is not the case with a wound when the microbes have colonised in it; then swabbing with iodine is powerless. But bullet wounds painted with tincture of iodine immediately after their infliction and before the application of the first dressing follow an aseptic course. It is therefore necessary that the swabbing with iodine should be immediate, and this is possible only if the soldiers themselves have the necessary material at their disposition—a difficult matter to ensure. Fortunately, this difficulty has now been solved by the manufacture of friable ampoules of tincture of iodine, made of hermetically sealed glass. Their diameter is 6 mm., their length from 6 to 7 mm. Near one end they are contracted, and the bottom of the neck which divides them into two unequal bulbs separated by a file mark. The larger bulb is held between the right forefinger and thumb, the smaller being in the left hand. A slight pressure suffices to break the ampoule between the two bulbs. The large bulb contains a soft cotton brush with which it is very easy to paint a much larger surface than that of a single dressing. Each ampoule is enclosed in a small cardboard box strong enough to protect it. The whole apparatus is not much larger than a small pencil. Professor Pierre Delbet has expressed his strong approbation of it. Thanks to private generosity, 6000 ampoules were at once sent to the firing line, and each day during the past week a similar number has been despatched and the supply will be kept up. The net cost is very slight, and it is hoped that all our soldiers will be provided with them.

Nov. 1st.

Danger of Small-pox in Dublin.—Sir Charles Cameron, superintendent medical officer of health of Dublin, has addressed a letter to the press directing attention to the large number of young persons in Dublin who are unvaccinated. For some years past the boards of guardians in the neighbourhood of Dublin and some other districts have been neglectful of their duty as to the administration of the vaccination laws, and the Local Government Board has contented itself with the occasional expression of a pious opinion on the subject. With a large number of foreign refugees arriving in Dublin the danger of the introduction of small-pox is greatly increased, and were a few cases to occur an epidemic could hardly be avoided.

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[1] We publish this letter as from Paris, whence it reached us, at our Correspondent's desire. He is not at liberty to disclose his position with the fighting forces.—Ed. L.

Correspondence.

"Audi alteram partem."

MEDICAL RECORDS OF THE WAR.

To the Editor of THE LANCET.

SIR,—It is noteworthy that we possess no complete medical history of any of the numerous wars in which the British army has been engaged during the last century. If, for example, any one of us desires to inquire into the mortality from zymotic disease during the Crimean or even during the more recent Boer war, there is no easily accessible authoritative survey of the medical proceedings of either war to which we naturally turn for the required information. After much search we might, it is true, come across it in some excellent article contributed to the *Journal of the R.A.M.C.*, but, again, we might not, or we might hunt it down in the Annual Reports of the Director-General. But despite the abundant time and efforts which they represent Blue-books and other official documents are not literature. As likely as not the library we are accustomed to use does not stack these on its shelves. This is a defect which should be remedied in the greatest and gravest war with which our country has ever been overtaken, a war in which, taking into account the relatively small size of our army, success will very largely depend upon the reduction of preventable disease to a minimum among our troops and upon the preservation of the greatest possible number of our men in a state of health and strength upon the battle line, in which, therefore, the Royal Army Medical Corps will be a foremost factor.

But if such a history is to be written it must (1) be official; and (2) it must be based upon precise data. That is to say, from the beginning it must be clearly borne in mind by the whole medical staff that the data bearing upon each case must be so collected and recorded as to be serviceable for future reference. In the matter of case reports and records the Royal Army Medical Corps has a system that is beyond reproach. It must be remembered, however, that there are many voluntary agencies at work, hospitals equipped and manned by those hitherto unconnected with the army organisation. If any one unit fails to do its duty it renders the whole record imperfect. It is essential, therefore, that a small and authoritative body be appointed that, under the control of the Director-General, shall have oversight, collection, and preservation of hospital and other medical records. The active members of the Royal Army Medical Corps are rightly occupied in meeting the vital needs of the moment; it would be unwise to demand that certain of their number be called off to take special charge of this work. It is doubtless this very devotion of a well-worked body to immediate needs that explains the non-existence of authoritative medical histories of previous wars. The work could be accomplished equally well by medical men of standing and authority outside the service, once they had familiarised themselves with the statistical methods of the Director-General and his staff. Not mere clerks are wanted, but men possessing such status that their directions would be accepted and fulfilled by the different hospital units. There can be no lack of medical men of high standing above the military age of service who would gladly, not to say eagerly, embrace such opportunity to be of service.

Those of us who are associated with hospitals know well that there is no greater stimulus to thoroughness and efficiency on the part of the medical staff, from the highest to the lowest, than is afforded by a good system of case reporting and record. A case well reported is a case well studied; and careful diagnosis and right treatment are the natural sequence. Wholly apart from the matter of future utility, a committee charged particularly with the oversight of the medical records of the war would contribute materially to the efficiency of the medical service and the welfare of our troops.

I am, Sir, yours faithfully,

J. GEORGE ADAMI.

McGill University, Montreal, Oct. 20th, 1914.

THE WOUNDED IN THE WAR.

To the Editor of THE LANCET.

SIR,—May I venture to confirm the opinion expressed elsewhere that the care of our wounded needs immediate supplementation, not by the appointment of a few consultant diagnosticians, but in notably increasing the staffs and equipment of the base hospitals in France by sending out a number of hospital surgeons of experience? The condition in which the wounded arrive here, the statements they make of the want of surgical attention during transport, especially in trains, the fact that many cases are prejudiced (some have even died) by being put on board ship when they should have been treated at a base hospital, are all clearly due to a shortage of experienced surgeons on the other side of the Channel.

There are a number of Territorial medical officers like myself who found ourselves practically unemployed by the War Department as soon as we had completed the preparation of the base hospitals. In thereupon volunteering, as I did on August 12th, to be transferred to the Active Service List, I addressed on August 16th a memorandum to the Director-General venturing to suggest that as under the circumstances of the present war sudden pressure on the bases must be expected, the appointment of consultants as in the Boer war would not be so useful as the addition of a number of us to the Expeditionary Force as supernumerary surgeons of hospital experience who could be sent by the principal medical officer to serve base hospitals wherever the pressure was greatest. This suggestion, however, has not so far been accepted, and though naturally one is in favour of one's own view, I cannot help still feeling that our wounded are not receiving all the surgical help their splendid services deserve.

I am, Sir, yours faithfully,

Nov. 2nd, 1914. VICTOR HORSLEY.

VOLUNTEER SURGEONS FOR FRENCH HOSPITALS.

To the Editor of THE LANCET.

SIR,—You were kind enough to publish on Sept. 26th a letter of mine written at Crépy-en-Valois, in which, amongst other matters, I made an appeal for surgeons for the French hospitals near the front. To that letter I am glad to say I had the large number of 153 replies, many of them from men holding important positions in London and provincial hospitals as surgeons or anæsthetists.

My letter was copied or extracted in some French journals, with the unlooked-for result that I have become an unofficial agent for French hospitals seeking British surgeons and for British surgeons willing to give their services for periods varying from one to two or in some rare cases for three months.

I forwarded my earlier lists to the British Red Cross Society. Lord Kitchener took some of the younger men for the Royal Army Medical Corps, while the society took some others who were willing to "sign on" for at least six months. This was, of course, for the service of our own troops. I wish not to be thought as in any way criticising the splendid work done by this organisation as regards the object for which it was primarily instituted, and it is satisfactory to be able to state that, as far as I have had opportunities of judging, everything possible, even in very difficult circumstances, has been done for our wounded or sick soldiers.

During the last few weeks I have been several times asked to find French-speaking volunteer surgeons who would work for short periods under the Croix Rouge Française. The French committees who ask for this assistance are in this position: They are in large towns having in normal times a well-trained body of hospital and private practitioners. At present nearly all their operating surgeons are at the front or in the clearing hospitals close to it. The local committees are doing the general work of these large auxiliary hospitals with the help of the general practitioners in the town. In a great many cases they would be glad of the services of one or two experienced British surgeons who have some facility in French. They know they cannot afford to pay anything like a suitable fee for such services for a long period, and, to put it quite plainly, they do not want young men just qualified who may not command the confidence of the local practitioners. What they do want are men of good surgical experience who would be willing to give their services for, say, six weeks or two months at a time. They would be expected to perform such operations as were required in fresh cases, or as became necessary in the course of treatment. Also to help the local men with advice when called on and, in fact, to act as consulting and operating surgeons.

Last week I was asked somewhat urgently for two surgeons for a large town in central France where a new hospital with 300 beds is being opened in addition to some hundreds already provided. As I had no more French speakers on my list I wrote to the British Red Cross Society. I had a reply that my letter had been handed to their Anglo-French Committee, who would consider it on receiving further particulars.

The difficulties of this committee are that to a certain extent their action must be general and dictated by the policy of some central organisation, whereas what is wanted is far more flexibility which would allow of the kind of man suitable for the purpose proceeding at once to the place where it is known that his services are needed. Hitherto the policy has been to send a "unit" consisting of a surgeon and nurses who take complete control of the hospital provided by the French organisation with exclusion of the local medical men and nurses, on the plea that French surgery and nursing are not on English lines or up to our standard. I have just been informed that the committee are now willing to coöperate in sending voluntary surgeons on the lines indicated above as soon as the present strain on their organisation has slackened.

I have been requested to continue my work as an intermediary for obtaining surgical assistance in French towns on the grounds that a change in its management would cause inconvenience to many persons in France who may write to me in the present slow course of post. I shall be glad to hear from any French-speaking surgeons willing to give their services on the above lines. I am working now in connexion with the London committee of the Croix Rouge Française, through whom the necessary arrangements as to fares, &c., will be made. At the present moment I have inquiries for two more surgeons.

I am, Sir, yours faithfully,
JAMES DONELAN.

6, Manchester-square, London, W., Nov. 2nd, 1914.

PROGNOSIS IN CANCER OF THE TONGUE.

To the Editor of THE LANCET.

SIR,—In his very interesting article upon "Prognosis in Cancer of the Tongue" in THE LANCET of Oct. 24th Mr. W. Trotter states that the chief post-operative dangers are those of infection of the lungs and infection of the wound. Of the latter I am not competent to speak; the former come within my province, for they are due in all cases to the aspiration of septic material during anæsthesia. The choice of the method of administration therefore assumes much importance, and it is in this connexion that I venture to make some suggestions and some criticisms of Mr. Trotter's remarks.

Of the two methods of administration mentioned —viz., a preliminary tracheotomy or laryngotomy and plugging of the pharynx, and the intratracheal insufflation of ether—Mr. Trotter employs the first and is hostile to the second. His reason is that he thinks there is a "risk of conveying septic material into the trachea during the introduction of the tube." He does not say that this has happened, nor do I know whether his fears are justified, but it is conceivable that if the catheter (tube) is introduced by the *indirect* method it might happen. By means of *direct* laryngoscopy, however, the catheter is inserted absolutely sterile without coming into contact with anything but the interior of the laryngoscope. For this and for other reasons I have always advocated the direct method, and Mr. Trotter's remark supports my opinion. I believe moreover that not only in this country but in the United States anæsthetists almost universally use this method, and that those who started their intratracheal novitiate by using the indirect method have later abandoned it with increasing experience of its difficulties and uncertainties. Direct laryngoscopy may not appear easy at first, but it is soon mastered, and is then quite certain and without danger.

Our experience at Guy's is very decidedly in favour of intratracheal insufflation, and I do not think I exaggerate when I say that for nearly two years now no other method has been used in these mouth cases when it has been possible to obtain the services of an anæsthetist acquainted with the technique. My own experience in this particular class of operation is based upon nearly 100 cases, 48 of these having been for malignant disease in patients usually, of course, of an advanced age. No pneumonia has occurred; the anæsthesia has always been entirely successful. My impression is that surgeons will not continue to use any method which has only a "paper reputation" to back it. Meltzer's method has made good its claims in these cases.

Infection of the lungs occurs "not very uncommonly" after a preliminary gland operation, due, as Mr. Trotter points out, to an obstructed airway and vigorous breathing leading to aspiration from the mouth. To prevent this risk Mr. Trotter has apparently to choose one of two alternatives, either to do the gland and mouth operations in one stage or to do a preliminary laryngotomy or tracheotomy at both stages. I do not think the latter is at all likely; the former is not always advisable. Some patients therefore must run the risk of pneumonia, unless suitable precautions can be taken. This is exactly where intratracheal administration is so valuable. An excellent anæsthesia is obtained and infection of the lungs does not occur.

May I in conclusion say that tracheotomy is not always so "quickly done" that it does not add appreciably to the length of anæsthesia, a serious thing in many elderly patients about to undergo an extensive operation? Whether it is as harmless as the introduction of a catheter through the larynx is hardly open to question.

I am, Sir, yours faithfully,
FRANCIS E. SHIPWAY.

Queen Anne-street, W., Oct. 29th, 1914.

SIR JAMES Y. SIMPSON AND ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—In your issue of to-day Sir William Osler, by his interesting extract from Sir J. Y. Simpson's letter to Dr. Bigelow, shows that Simpson repudiated the suggestion that he had used chloroform as an anæsthetic before ether. Indeed, he could not have done otherwise, for it is on record that he used ether for the first time in midwifery practice on Jan. 19th, 1847, whereas it was not until Nov. 4th of the same year that he introduced chloroform as an anæsthetic to his friends J. M. Duncan and Keith. A graphic account of this celebrated symposium in the "Athens of the North," when chloroform was the fare and not a Chian vintage, has been given by Professor Miller.[1] It is, however, on the question of priority in the use of ether that I venture to address you.

Simpson, according to the extract from his letter quoted by Sir William Osler, after discussing the rival claims of Jackson, Wells, and Morton, decided in favour of Morton. He therefore does not seem to have known in 1870 that Dr. Crawford W. Long, of Athens, Georgia, undoubtedly used sulphuric ether as an anæsthetic during minor operations four years and six months before it was so employed by Morton at the suggestion of Jackson, and nearly three years before Wells used it at Marcy's suggestion, and discarded it in favour of nitrous oxide. Long's first anæsthesia with sulphuric ether was on March 30th, 1842. Morton's first anæsthesia with sulphuric ether was on Sept. 30th, 1846. Wells's first anæsthesia with nitrous oxide gas was on Dec. 11th, 1844. A few days later he experimented on himself with sulphuric ether, but resolved to adhere to nitrous oxide alone. Dr. Marcy, of Martford, in January, 1845, gave the vapour of sulphuric ether to a sailor for the extirpation of a small wen on the side of his head. "The patient was insensible and the operation successful, but Marcy after this experiment still advised Wells to stick to the gas as being more agreeable and perhaps safer than ether."

For the evidence on the whole matter reference may be made to a paper by Dr. J. Marion Sims, New York, in the *Virginia Medical Monthly*, May, 1877, a reprint of which is in the library of the Royal Society of Medicine. It is fair to mention that the discovery of sulphuric either as an anæsthetic by Marcy, Jackson, and Morton was made without knowledge of Long's work. Long's fame was confined to the circle of a small country town. He waited for the opportunity—which never came—of performing some major operation under ether before communicating his experiences to the scientific world. It was not until 1853, when Morton and the friends of Wells and Jackson were clamouring for State recognition and reward for their labours, that Crawford W. Long made good his claim to priority in bestowing the gift which has since become "the blessed possession of the whole world."

I am, Sir, yours faithfully,
LEONARD GUTHRIE.

Upper Berkeley-street, W., Oct. 31st, 1914.

APPENDICITIS IN CHINA.

To the Editor of THE LANCET.

SIR,—I have read with great interest the article in THE LANCET of July 25th last, entitled "The Geographical Distribution of Appendicitis." I would like to say that the experience of those gentlemen who have practised in China mentioned in this paper does not coincide with mine. I am in charge of a hospital with an out-patient department of 100 patients daily, and in four years I have seen two undoubted cases of appendicitis. Both cases refused operation. One died subsequently, the second recovered.

A third case was that of my chief assistant, Dr. H. H. Wang, who had appendicitis. I removed a gangrenous appendix within the first 48 hours. This gentleman, who has been attached to the hospital for 20 years, expresses the opinion that appendicitis is exceedingly common among the Chinese. Cases which he recalls now as simply peritonitis he regards as having an appendicular origin.

Moreover, I do not agree that the Chinese food and habit do not favour appendicitis. Constipation is common, and while it is true that rice is eaten in a beautifully cooked condition, at the same time raw cucumbers, raw marrows, &c., are consumed among the coolie classes who form the bulk of the nation.

I am, Sir, yours faithfully,
HUGH B. KENT,
Medical Officer, Kailan Mining Administration.

Tongshan, North China, Sept. 26th, 1914.

THE WAR AND MEDICAL STUDIES.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Oct. 31st there is an annotation on the above subject, in which it is said that the shortage of medical students is alarming with reference to the future supply of medical men. I should like to point out that although this shortage may be due to some extent to the war it is very largely due to the National Insurance Act, and began long before the war broke out. Under existing circumstances a young medical man without capital must either do panel work or starve, as he cannot now settle in a working-class neighbourhood and acquire a private practice comparatively quickly. I have met many medical men who have told me that they had intended their sons for the medical profession before the Act was passed, but have now put them into some other calling. The large majority of existing medical men have been forced to take panel work or lose a large proportion of their practices, but many of these have decided that it would be cruel to put their sons into a profession in which a large portion of the work obtainable is done under the degrading conditions of the Insurance Act. I am not a politician, and I regard both parties in Parliament as equally responsible for the degrading condition of medical men under the Insurance Act, but I do not see why the war should be blamed for that for which it is not responsible.

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[1] Surgical Experiences of Chloroform, 1848-49

I am, Sir, yours faithfully,
LESLIE THORNE THORNE, M.D.Durh.
Harley-street, W., Nov. 2nd, 1914.

To the Editor of THE LANCET.

SIR,—With regard to your annotation on the War and Medical Studies in THE LANCET of Oct. 31st, I should like to draw your attention to one aspect of the question omitted by you. In most of the teaching hospitals of London, and I have no doubt in the provinces, many students belonging to the Royal Army Medical Corps branch of the Officers Training Corps joined the forces as orderlies in the Royal Army Medical Corps and are now attached to the various military hospitals. Several, if not all, of these have passed their second university examination in medicine or its equivalent in the colleges, and the authorities are allowing the time spent in the wards of these hospitals to count in their curriculum. I trust, however, that facilities will be given them on the expiration of their six months to attend other hospitals and classes so as to qualify as quickly as possible, since they will be extremely useful as qualified men should the war continue after this period. I am, Sir, yours faithfully,

R. KING BROWN, M.D. R.U.I.
Bermondsey, S.E., Nov. 2nd, 1914.

OSTEO-ARTHRITIS OF THE HIP-JOINT.

To the Editor of THE LANCET.

SIR,—In a letter in THE LANCET of Oct. 10th Mr. W. J. Midelton has done us the honour of referring to a contribution by ourselves on "Osteo-arthritis of the Hip and its Diagnosis in Early or Pre-osteophytic Stages." While grateful to Mr. Midelton for his strictures we must confess that they appear to us both carping and irrelevant. In commenting on our paper he states: "I have long held that wherever there is neuritis there is always arthritis." With regard to this sweeping assertion we venture to affirm that there is nothing in our contribution to justify such an inference being drawn, and his experience must be wholly diverse from our own, and indeed for that matter from all other students of osteo-arthritis as evidenced by their writings.

The nerve pains in osteo-arthritis are referred and *neuralgic* in nature, and a genuine *neuritis*, whether of the sciatic or anterior crural trunks, is exceptionally rare. Adams in his classical treatise cites only one instance, that of the late Dr. Perceval, of Dublin. This great physician was afflicted with well-marked malum coxæ senilis and suffered severely from pain along the path of the anterior crural nerve. At necropsy it was found that this trunk was inflamed owing to its being stretched over an osseous deposit springing from the front of the right acetabulum. In rare instances, too, a similar neuritis has been produced in the sciatic trunk by exostoses projecting from the posterior rim of the cotyloid cavity, and such outgrowths in isolated cases have been removed with resulting amelioration of the neuritis. Space forbids our dwelling on the many other instances at variance with Mr. Midelton's assertion that wherever there is neuritis there is always arthritis.

We have still greater difficulty in accepting the further assertion made by him that "in osteo-arthritis the actual germs are present in the joint." Certainly, as far as we are aware, Mr. Midelton's experience on this point is unique. The only concession we feel inclined to admit here is that changes indistinguishable from osteo-arthritis sometimes supervene secondarily in joints the seat of old tuberculous, gonorrhœal, or other types of infective arthritis. But the development of such changes we would suggest is susceptible of another etiological explanation. The cases that develop these secondary osteo-arthritic changes are those types of infective arthritis in which grave disorganisation of the articular ends has occurred. As a result thereof the joint surfaces lose their normal coaptation, and a state of incongruence on the part of the articular surfaces is established. It follows, therefore, especially in the joints of the lower limb, that the static efficiency of the articulation is impaired and the lines of transmission of body weight are altered. In this way often parts of the joint surface not normally in contact become so, and *vice versâ* those usually in apposition lose touch with each other. A joint placed at such a mechanical disadvantage is obviously subjected to a series of more or less continuous slight strains or injuries. Thus, for example, in the hip the capsule undergoes torsion and the ligamentum teres which transmits the nutrient artery becomes twisted with possible interference of the blood-supply, and in this way there follows in sequence to mechanical instability a state of disorganised or deficient nutrition which in long years is evidenced by erosion and the bony outgrowths typical of osteo-arthritis. One has but to study closely specimens of this disease to note how the very location of exostoses betrays an effort on the part of nature to counteract the instability of the disabled articulation. It is impossible to dwell at length on the importance of static and mechanical agencies as etiological factors in osteo-arthritis, but the view certainly derives great support from the fact that external traumata as opposed to the internal traumatisms we are now considering play a leading rôle in the etiology of osteo-arthritis.

In accordance with his view as to the infective origin of this disease, Mr. Midelton cavils at what he terms the meagreness of our notes on treatment, laying especial emphasis on the absence of any suggestions on our part for combating the germs he believes to be responsible for the origin of osteo-arthritis. This to our mind is somewhat unfair, as the title of our paper distinctly indicates that it is devoted to the question of early diagnosis, and naturally in conformity therewith such remarks as we made were simply incidental. At the same time in justification we may draw his attention to the fact that, granting our conception of the etiology of the disease to be correct—namely, that it is due to traumata of external or internal origin—the principles of treatment were clearly laid down. As to his own method of combating the germs, Mr. Midelton enters into no detail, and we would be much obliged if he would indicate the particular type of organism or organisms which in his view are invariably to be found in the joint cavities.

Lastly, as to Mr. Midelton's view that blistering is of great value in "early and late cases of osteo-arthritis in remedying to some extent the changes in the cord and checking the ravages of germs." On this point we admit that counter-irritation is of great value in alleviating the local and referred pains of osteo-arthritis; but in our experience direct local vesication over the affected nerve trunks is all that is necessary, and we have never found it needful to advise the prolonged blistering of the cervical and lumbar enlargements of the spinal cord as advocated originally by Dr. Latham. Neither, if we may say so, does Dr. Latham himself advocate this treatment in *osteo-arthritis*, for as far as we have understood his writings he restricts this form of treatment to *rheumatoid* or *atrophic* arthritis, a disorder, in our opinion, absolutely distinct from hypertrophic or osteo-arthritis. Mr. Midelton demurs at the absence of any allusion on our part to the changes which he affirms occur in the cord in osteo-arthritis. As far as we are aware no changes have been established in the cord in osteo-arthritis, and there is grave reason to doubt whether the cord changes in the allied condition, rheumatoid arthritis, meagre as they are, are of the nature of causal lesions.

In conclusion, rightly or wrongly, the impression made upon us by Mr. Midelton's letter is that through some misunderstanding he has misconstrued our contribution as referring to rheumatoid and not to osteo-arthritis, though we had supposed our article was sufficiently lucid to dispose of any doubt as to the exact nature of the arthritis we set out to deal with.

We are, Sir, yours faithfully,
A. BASSETT JONES.
Aberystwyth, Nov. 1st, 1914. LL. JONES LLEWELLYN.

TRAUMATIC TETANUS.

To the Editor of THE LANCET.

SIR,—I should be glad if you would kindly allow me to correct a misprint in my paper on the above subject in your issue of Oct. 31st. Referring to the relative potency of tetanus toxin (p. 1038) the computed fatal dose of which for a man of 75 kilogrammes is 0·23 milligramme, the next sentence at present reads, "As the computed dose of dried cholera venom is 4·38 milligrammes." The word "cholera" is a misprint for *cobra*.

I am, Sir, yours faithfully,
London, W.C., Nov. 2nd, 1914. M. H. GORDON.

THE WAR AND THE DISLOCATION OF PRIVATE PRACTICE.

To the Editor of THE LANCET.

SIR,—Some weeks ago when you first commented upon this dislocation in your columns I ventured to write to you on the subject, but you then doubtless for sufficient reasons apparently ignored the contents of my letter. As you have again adverted to the subject I venture to address a second communication to you, more especially as you appear in your issue of Oct. 24th to attempt to saddle the responsibility on the wrong horse. The War Office, i.e., Lord Kitchener, as long ago as August 14th in a circular letter wrote as follows:—"(W.O. Circular letter 9/Gen. No. (T.F.I.)/4087). Lord Kitchener is fully aware that the spirit of the Territorials would induce many to volunteer for foreign service, although they may have very important duties to look after in this country which necessitate their remaining at home. He would point out that home defence is a very important matter, and he does not desire that those who cannot on account of their affairs volunteer for foreign service should by any means be induced to do so, or on account of any such inability should leave the Territorial Force." And in another paragraph of the same letter he states that he hopes to be able to arrange that the training of the Territorial Force (Home Defence) may be on a system by which leave can be given for those serving to look after their urgent private affairs, somewhat on the 'commando' principle which prevailed in South Africa. Now these views seem to have been more or less embodied in Army Order 9/IX/Reserve/1436, Section 3, subsection (*a*) of Oct. 17th, wherein it is stated that where certain members of the Territorial Force require to be released from military duty, the Army Council will give authority for such release on its being satisfied that in every individual case the officer is urgently required in the public interest for employment in other than a military capacity, and in subsection (*d*) such release is to be granted for "specially urgent reasons of a public character. Such release is only operative for the period during which such emergency lasts." But while the Army Council can issue these orders, it is quite a different matter to get generals and their staffs to act in accordance with even the spirit of these official pronouncements.

Take for instance my own personal experience. I hold a post in civil life the most important duties of which it is impossible to delegate. Though for the first four weeks of the embodiment the brigade was stationed only some 28 miles from my home—an easy 80 minutes run by motor—it was only with the greatest difficulty and unpleasantness we were allowed to leave the town, though a telephone message to my house could have brought me back in less than an hour and a half. For the last two months we have been stationed some 250 miles from my home—and most of our homes—I have had only four days' leave at the end of last month on "urgent private affairs." The brigade has some ten medical officers for about 2000 men, and the general medical officer has tried to help us by always recommending our applications for leave when in his opinion he could do so, and is quite prepared to form a roster for leave which he stated could be done quite consistently with medico-military exigencies. But the brigade headquarters generally refuse the leave, occasionally granting it grudgingly as a special favour. I have, however, after a fight, now obtained four days' leave, but the permission is accompanied by instructions that I must proceed to take immediate steps to divest myself entirely of my civilian liabilities—apparently for quite an indefinite period—an undertaking which I cannot and do not propose to attempt. Moreover, I was told by one of the headquarters staff officers on this occasion that as I was not a volunteer for foreign service I need expect no further leave whatsoever during the embodiment. And the question looms largely in the matter of granting leave—it has been used and is being used as a lever to force Territorials to volunteer for foreign service; and so in spite of Lord Kitchener's and the Army Council's instruction to the contrary, those of us who cannot volunteer for abroad are being penalised and the health and general wellbeing of the community suffer. I am in my fiftieth year, and have, as I have already said, duties which I cannot delegate and domestic responsibilities which I cannot avoid, and I hold that men with less responsibilities should go abroad before citizens of my age and circumstances.

And I submit that there is nothing in the instructions of the Minister of War or the Army Council which prevents a certain amount of leave being granted us for our own interest and in the interest of the community, and there is everything in these instructions to prevent our being penalised because we cannot volunteer for foreign service.

I am, Sir, yours faithfully,

Nov. 2nd, 1914. CITIZEN SOLDIER.

Obituary.

EDWARD McKELLAR, M.D. St. And., M.R.C.S. Eng., J.P.,

DEPUTY SURGEON-GENERAL, BENGAL ARMY (RETIRED).

Deputy Surgeon-General Edward McKellar, who died at Woodleigh, Preston-road, Brighton, on Oct. 27th, had passed the most active years of his life in India, where he served throughout the Mutiny campaign. Son of Dr. Dugald McKellar, he was born at Battersea, and received his early education at Clapham Grammar School and University College, London. Following in the footsteps of his father, he adopted the medical profession and became M.R.C.S. Eng. in 1849, and later was appointed assistant surgeon in the East India Company's Service. He served throughout the second Burmese war in 1852–53 with the 80th Foot, and was present at the capture of Rangoon, Martaban, and Pegu, receiving the medal and clasp for the campaign. He was surgeon in the famous Gwalior contingent which mutinied and massacred nearly all its officers, he himself having a narrow escape, and afterwards served throughout the Indian Mutiny campaign. Subsequently he became attached to the Bengal cavalry for 16 years. During the time he was in India he was in no fewer than 16 engagements. He held many important civil and military appointments and rose to the position of deputy surgeon-general.

In 1870 he graduated M.D. at St. Andrews and soon afterwards settled at Brighton, where he took a lively interest in all local affairs. For many years he was one of the representatives of his parish (Preston) on the Steyning board of guardians. He was manager of one of the Brighton council schools, and as a magistrate for the borough of Brighton proved himself efficient and kindly. He was more or less of an invalid for the last ten years of his life.

Dr. Frederick B. Power is retiring from the directorship of the Wellcome Chemical Research Laboratories. The high character of the research work that has been carried out in these laboratories under his immediate direction is well known to all our readers. Dr. Power will be succeeded by Dr. Frank L. Pyman, whose contributions to chemical science have already been important.

THE WAR.

THE LEGION OF HONOUR.

The President of the French Republic, with the approval of the King, has bestowed the decoration of the Legion of Honour on the following officers of the Royal Army Medical Corps for their gallantry during the military operations between August 21st and 30th, 1914:—*Croix d'Officier:* Major S. L. Cummins. *Croix de Chevalier:* Captain S. E. Lewis, Captain J. T. McEntire, and Captain H. S. Ranken. The last officer has died from wounds received in action.

THE CASUALTY LIST.

The toll of medical lives has been heavy during the past week. Six officers of the Royal Army Medical Corps have been killed at the front, and it is to be feared that the death-roll in the wreck of the hospital ship *Rohilla* will when finally verified contain several medical names. The following are the names of officers in the Royal Army Medical Corps which have appeared in casualty lists since our last issue:—

Killed: Captain Michael Joseph Lochrin, Captain Rupert Henry Nolan, Captain Richard Dominick O'Connor, Lieutenant Reginald Edward Porter, Lieutenant Hugh John Sladen Shields, and Lieutenant David Wylie Rintoul.

Wounded: Lieutenant J. R. Hayman.

Missing: Captain R. V. Dobey.

THE POSITION OF THE BELGIAN MEDICAL MEN AND PHARMACISTS.

A meeting was held on Wednesday afternoon at the offices of the British Medical Association to consider the position of Belgian medical men and pharmacists whose professional position has been involved in the utter ruin which has fallen upon their country, and which has destroyed the whole machinery of the medical profession and its adjuncts. The meeting was convened by Dr. Dawson Williams, Editor of the *British Medical Journal*, and Dr. Squire Sprigge, Editor of THE LANCET, in response to representations made by a provisional Belgian committee, whose representative, Professor C. Jacobs, is now in London. There were present at the meeting Sir Thomas Barlow, Sir Rickman Godlee, Sir Frederic Eve, Sir William Bennett, Dr. Frederick Taylor, Dr. Meredith Townsend, Dr. H. A. Des Vœux, Dr. George Ogilvie, Dr. Alfred Cox (Medical Secretary of the British Medical Association), Mr. Guy Elliston (Financial Secretary of the British Medical Association), Dr. S. Squire Sprigge, Dr. Dawson Williams, with the following representatives of Pharmacists, Mr. E. T. Neathercoat, Mr. F. Pilkington Sargeant, Mr. A. J. Chater, Mr. A. Hagon, and Mr. W. J. Woolcock.

Sir Rickman Godlee took the chair, and, after a brief explanation of the position by Professor Jacobs, the following committee, with power to add to their number, was appointed to make an early report on the procedure to be adopted:—Sir Thomas Barlow, President of the Royal College of Physicians of London; Sir Watson Cheyne, President of the Royal College of Surgeons of England; Dr. Meredith Townsend, Master of the Society of Apothecaries; Sir Rickman Godlee; Sir Frederic Eve; Dr. Frederick Taylor; Mr. E. T. Neathercoat, Vice-President of the Pharmaceutical

Society; Mr. Woolcock, secretary of the Pharmaceutical Society; Dr. H. A. Des Vœux; and Mr. T. Jenner Verrall, the chairman of Representative Meetings of the British Medical Association. Dr. Sprigge was appointed secretary and Dr. Des Vœux treasurer.

The instructions of the meeting to the committee were (1) to communicate with the Belgian Minister and the authorities of the Belgian Relief Fund; (2) to apply to America and other countries if desirable for assistance in the raising of any fund; and (3) to report generally.

MEDICAL RELIEF FOR BELGIAN REFUGEES.

A dispensary has been opened at 265, Strand, W.C., under the auspices of the War Refugees' Committee for the medical treatment of sick Belgian refugees. In the earlier days of the exodus assistance was given at the Aldwych Rink by Voluntary Aid Detachment, London, No. 4, of the British Red Cross Society, under the commandant, Miss Davenport, with such volunteered medical aid as the occasion required. But with the enormous influx of refugees, many of whom only speak Flemish, it was found imperative to organise the medical relief, to secure separate quarters, and to enlist the coöperation of Belgian doctors, many of whom have found asylum in this country. Accordingly, on Oct. 20th, a meeting of doctors who had already been giving their services was held, by the invitation of Dr. J. H. Philpot, at 61, Chester-square, S.W., at which the following were present: Dr. H. A. Des Vœux, Dr. Kielemoes (Melle), Mr. D. F. Maunsell, Dr. Clément Philippe (Brussels), Dr. Victor Philippe (Brussels), Dr. J. H. Philpot, Dr. H. Austin Philpot, and Miss Davenport. It was resolved that those present should constitute themselves into a provisional committee, with Dr. J. H. Philpot as chairman and Miss Davenport as secretary, which, with the authorisation of the War Refugees' Committee, should undertake the management of the refugees' dispensary, and arrangements were made for a continuous service of consultations daily from 10 A.M. to 1 P.M. and 2 P.M. to 6 P.M., and on Sundays from 10 to 11 A.M. The War Refugees' Committee has accepted these arrangements, and the dispensary, though in rather cramped quarters, is now in full working order, with an efficient staff of nurses belonging to the above-named detachment of the Red Cross. The general expenses of the institution are borne by the War Refugees' Committee, but liberal donations have been made by friends of the movement in order that medicines and dressings may be supplied free. Many Belgian doctors now in London, some of whom are well known specialists, have inscribed their names at the dispensary and offered their assistance for consultation in special cases.

PHYSICIANS AND SURGEONS IN A MILITARY HOSPITAL.

At the present time there are a number of hospitals, the General or Base Territorial Hospitals, founded on a military basis in which physicians and surgeons holding commissions in the Royal Army Medical Corps Territorial Forces are serving. There are certain conditions prevailing in them which the medical staff find very different from those they are accustomed to in their civil appointments in the large general hospitals with medical schools. The amount of work to be accomplished and the number of patients to be seen must undergo great variations, and inevitably it is frequently necessary to change the wards from medical to surgical or the reverse. Those in charge of wards, on arrival at the hospital, may find, moreover, that their patients have been removed without their knowledge. This is a necessity, for a telegram may be received from the port at which sick and wounded are being landed that 150 patients are to be received in a few hours, and beds must be found for them somewhere. If the number of wounded exceeds those of the sick some of the medical wards may have to be cleared in order to make room for them; those patients who can be sent to convalescent homes or to their friends being at short notice discharged from the hospital. Further, at a military hospital the War Office officials do not distinguish between physicians and surgeons, and although the difference is fully appreciated and acted on so far as possible by the commanding officer, if the number of wounded is very great it would be quite in accord with right principles if the physicians were asked to take charge of the lightly wounded or convalescent surgical cases. There is a certain amount of routine business which members of the staff may find irksome but which is necessary in a military hospital, such as the formation of "boards" for reports on wounded officers or the discharge of men as unfit for service. These procedures occupy much time, but must be carried out. The General Territorial Hospitals present one aspect which is of the greatest value—namely, that at any time consultations may be held between physicians and surgeons, most of whom hold a high position in their profession, and many of whom have specialised in certain aspects of medicine and surgery. The benefits conferred on the patients are obvious.

THE WRECK OF THE "ROHILLA."

The hospital ship *Rohilla*, which left Queensferry for Belgium to bring back wounded, ran on the rocks half a mile south of Whitby at 4 o'clock on the morning of Oct. 30th. All the boats but one were broken by the seas and washed ashore; the last one was launched, but was swamped when near the shore. Many of those on board were happily rescued by the lifeboats, but a considerable number of lives were lost. All the nurses on board were saved. Further official details are anxiously awaited.

NOTES FROM CHAMBÉRY.

The following is a résumé of experiences extending over some weeks in a hospital at Chambéry, and shows how, as time has gone on, the French organisation has become gradually equal to the terrible strains put upon it. On the whole our correspondent's report makes satisfactory reading, the absence of typhoid fever among the wounded being particularly gratifying.

Soon after the mobilisation order had cleared the district of its healthy male adults instructions were given to make ready to receive the wounded. The town itself is small, only numbering five or six thousand residents, but it offers exceptional facilities for auxiliary hospital accommodation, in that it comprises spacious casinos and many palatial hotels. Within a fortnight, thanks to the active coöperation of private citizens with the constituted authorities, now subordinated to military control, we were able to report 1200 available beds. There was some difficulty with regard to surgical assistance, because all the local medical men under 45 had gone to the front, and those who remained, while equal to ordinary minor surgery, lacked experience in military emergencies. Fortunately, one or two foreign surgeons happened to be detained here by the quasi-impossibility of getting home, and they have been since reinforced by a draft of army surgeons, who have had by this time grand experience in dealing with injuries inflicted by bullets, shells, and shrapnel. So far not a single instance of bayonet wound or sword-cut has come under observation.

The staff was composed for the most part of willing but inexperienced volunteers, male and female,[1] who required to be trained to their duties, though some of them may have gone through a course of Red Cross training—roughly speaking, equivalent to a first-aid course at home. On the whole, this *ad hoc* organisation worked very well because strict aseptic precautions are of less importance when every wound is septic by the time it reaches hospital and when operations are limited to the removal of foreign bodies, bits of dead bone, &c., from septic cavities, and to amputations for gangrene or secondary hæmorrhage in septic wounds.

Speaking generally, nine out of ten wounds have been caused by fragments of shell or shrapnel balls (spherical, about the size of marbles) and only about 1 in 10 of bullet wounds. Bullet wounds with the modern conical, high-speed bullet only seem to be serious: (1) When towards the end of their course their direction is changed by contact with a bone; the impact makes them twist on their transverse axis, inflicting terrible lacerations at the aperture of exit, appearances which no doubt have given rise to the allegations respecting the use of dum-dum bullets. (2) They may traverse or enter a long bone, splitting it right up to the next joint, entailing serious consequences should any septic material such as particles of clothing, &c., have been carried in, or should the wound subsequently become infected, as was invariably the case. (3) These disastrous consequences are intensified when the bullet exerts its effects on the shoulder or hip joint. The head or neck of the long bone involved—femur or humerus—is often shattered with more or less injury to the ilium or scapula, entailing prolonged suppuration and calling for the removal of sequestra, the opening up of pockets, and the maintenance of efficient drainage. These were the cases in which secondary hæmorrhage was particularly apt to occur under circumstances rendering isolation and ligature of the main artery difficult or impossible, so that amputation was the only resort. Even so it often proved fatal. (4) When in wounds of the chest or abdomen septic material is carried in. In the absence of this complication this class of case did remarkably well. Our practice has been only to operate for the removal of foreign bodies when these had proved the starting-point of septic mischief or gravely interfered with function. The only exceptions were cases in which the bullet or metal splinter lay just beneath the skin.

The injuries inflicted by shell and shrapnel bore upon men who were either lying prone or who, on the other hand, were protected by entrenchments. The latter category comprised a large proportion of wounds of the hands and forearms, to be explained by the fact that the men were holding their knapsacks over their heads to ward off the débris of shells. Of the former, the riflemen, the upper part of the back was of course protected by the knapsack, and the effects bore mostly on the buttocks, the backs of the thighs, and legs. Grave destructive lesions of the buttocks were common. I can recall cases in which the buttock was entirely torn away, with or without part of the external genitals, or, it may be, ghastly lacerations of the thigh and formidable injuries to the pelvis. In one instance, now on the road to recovery, the shrapnel ball traversed and splintered the ilium, and could be seen in the radiogram lying inside the pelvis. The man complains of uneasiness in the outer and upper part of the iliac fossa, but nothing can be detected on palpation and he is doing well.

An interesting case was that of a man who received a bullet wound on the right side of the neck two or three inches below and a little behind the lobe of the ear, the aperture of exit being on the left of the last cervical vertebra. He felt as if struck by lightning and lay for two hours, when, as the fire slackened, his comrades pulled him back into the trench. In the evening they carried him on their rifles several miles to a hospital where the wounds, trivial in themselves, were dressed. He was found to be paralysed on the right side, with loss of sensation on *both* sides, though more marked on the right, and there was loss of sensation of the skin on the right half of the abdomen. He became (and remains) very deaf on the right side The face perspired on the left side and not on the right. He has recovered the use of the leg, and movement is slowly returning in the arm. He can now feel a prick or a pinch, but not a mere touch. The skin on the right side seems more sensitive to heat and cold than on the left. Patellar reflex much more marked on right side.

As showing the effects of mere concussion, a man, aged 35, was lying in a grange when a shell crashed through the roof and exploded. He lost consciousness for two hours, though he had only sustained a few scratches. Nevertheless he remained dull and apathetic for several days, taking no interest in what was going on around him. He complained that he was unable to read, and on testing vision it was found that though he could spell the letters of a word he was unable to utter the word; similarly, though he could write the letters of a word seriatim on dictation he could not write the word when pronounced. In the course of a fortnight these symptoms cleared up, though six weeks after receipt of the injury he still hesitated a little before naming the word.

We have had several cases of emphysematous gangrene calling for amputation. Although the adipose tissue in the flaps was yellow, offensive, and gelatinous, these cases did well in spite of some sloughing. There have been many cases with blue or bluish-green pus; they were characterised by profuse suppuration and a horribly offensive odour. Iodoform proved very effectual in these cases.

There have been several cases of tetanus, perhaps a dozen in all (out of a total of 1000 wounded), the symptoms supervening at or about the third week of injury. These were cases of extensive lacerated wounds contaminated with fragments of clothing or soil. They were given repeated doses of anti-tetanic serum, and the spasm was relieved by means of chloroform and chloral. Injections of carbolic acid (Bottini's method) were tried, but did not seem to do any good. The cases all proved fatal in from three days to ten days.

Side by side with these cases of unquestionable tetanus were two of pseudo-tetanus. I call it "pseudo" because in a couple of days the symptoms—severe general convulsions on pinching a muscle, trismus, and opisthotonos—passed off as suddenly as they were manifested, a result which could hardly be attributed to the treatment. The onset was very variable. In one there was muscular twitching for two or three days before the man developed risus and trismus. In another instance the attack was ushered in by a high temperature and diarrhœa, but in the majority trismus and risus sardonicus were the first symptoms.

There were a few cases of typhoid among the wounded, but not more than 3 or 4 per cent. Considering the conditions of life in the trenches and in the active fighting line this does not seem a large proportion. Combatants are often constrained to dwell for days together in the trenches, which serve as dining-room, drawing-room, kitchen, and water closet in one! Several men told me that having crept out of the trenches for sanitary purposes the enemy were inconsiderate enough to snipe them.

The Care of the German Wounded.

The Medical Chief of the German army, Dr. von Schjerning, has issued an official report covering the first two months of war only and referring to the western field of battle. The organisation and the material in aid of the wounded was, he reports, all that could be expected under the specially difficult circumstances due to the great rapidity of march, difficulty of transport, and extraordinary amount of wounded. In one week some 40,000 to 50,000 men with minor wounds were sent home. Often the fields of battle could not be searched for days. All those who could bear transport were sent back to Germany on foot, by carriage, or motor ambulances, or in the luggage vans available. All the trains bringing food and ammunition to the front returned filled with wounded. Those severely hurt were treated in field ambulances or war hospitals near the battlefields. Dysentery and typhoid fever occurred only sporadically. The wounded everywhere were well cared for, and he praises warmly the doctors and ambulance nurses. 9000 medical men were with the troops at the first, west and east, and in the first two months 74 medical men were in the casualty lists.

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[1] The French Army Medical Service, be it remarked, is made up of surgeons *de carrière* who undergo a special course of training at the Val-de-Grâce medical school, and of civil practitioners attached to the reserve and Territorial regiments who become army surgeons on mobilisation.

THE ORDER OF ST. JOHN OF JERUSALEM IN ENGLAND, AMBULANCE DEPARTMENT.

An appeal is being made by the ambulance department of the Order of St. John of Jerusalem for funds to extend its work amongst the wounded in the war by means of a shilling collection. Already 150 hospitals and convalescent homes have been established and staffed under the auspices of the order; 209 medical men and nurses have been sent out to the front; over 5500 orderlies have been despatched to the expeditionary forces, or distributed amongst the ships and naval and military hospitals; and 748 cases and bales of medical stores and supplies, including 56,000 articles of clothing, have been sent out to the sick and wounded. A depôt for the convenience of the troops has also been established at Southampton, where they can obtain food and medical assistance day and night, and a number of motor ambulances are being despatched to carry the wounded from the front to the base. The offices of the fund are at Marconi House, Strand, where accommodation has been kindly placed at the disposal of the ambulance department by the Marconi Wireless Telegraph Company.

OBITUARY OF THE WAR.

GEORGE HENRY CHISNALL, M.B., B.S. LOND., F.R.C.S. ENG.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

A former teacher writes:—"Perhaps in nothing is the waste of war more apparent than in the loss of those who after years of patient study have slowly perfected themselves in the art of healing only to be blindly crushed at the very outset of their career. The thoughts of many at the London Hospital must have yielded some such reflection on hearing of the death at Poperinghe of George Henry Chisnall, killed by shell fire on Oct. 24th while attached to the 1st Cameron Highlanders. Not only was Chisnall, as his academic distinctions prove, a student of outstanding ability, but he combined with a very thoughtful temperament an originality of outlook, an industry and a tenacity of purpose which persuaded his many friends that he would some day take high position in his profession. The essay on 'Fractures of the Upper Part of the Humerus and their Treatment' with which he won the Jonathan Hutchinson prize at his college was regarded as an earnest of a steady outflow of original work in the future. Personally he was noted for an imperturbable serenity of mind and a geniality of manner which made him beloved by all who knew him. Having held almost all the resident appointments in the gift of the London Hospital, he volunteered for service in the Royal Army Medical Corps at the beginning of the war, with the result which is now so deeply deplored. There only remains to us a memory, and a hope that after all Death may not be the gaunt spectre we imagine. To the Greeks it will be remembered *θανατος* was a thoughtful youth of not unkindly aspect; right in so much, perhaps they were also right in this."

BRIAN COLDEN ANTILL POCKLEY, M.B., CH.M. SYDNEY,

CAPTAIN AND SURGEON, AUSTRALIAN NAVAL RESERVE.

The tragic circumstances under which Captain Brian Colden Antill Pockley, surgeon in the Australian Naval Reserve, met his death on duty with a landing party at Herbertshohe, in German New Guinea, were in themselves of his own unwitting creation through an act of devotion to duty. It seems that Captain Pockley was called to attend to a wounded sailor, and finding that it would be necessary to send him to the rear, covered the sailor bearing him with his own Red Cross coat to indicate that he was engaged on a work of mercy and to procure him immunity from attack. Captain Pockley continued in his shirt sleeves to attend to another wounded man, when he was deliberately shot through the chest by a German officer. This officer was subsequently captured and tried by court martial on one of the warships for a breach of the Geneva Convention. He was, however, able entirely to satisfy his judges that, owing to the absence of any distinguishing mark, he had regarded Captain Pockley as a combatant, not recognising the work on which he was engaged, and so was exonerated from that worst of treacheries, treachery against the Red Cross, the one outstanding humane feature of modern warfare among civilised peoples. Captain Pockley was only 24 years of age, a brilliant scholar, an athlete, most popular with his school and college, and beloved by all who knew him. He graduated only this year at the University of Sydney as M.B., Ch.M. He was the son of Dr. Antill Pockley, of Sydney, who was President of the Australasian Medical Congress when it was held in Sydney in 1911.

DAVID WYLIE RINTOUL, M.B., CH.B. ST. AND.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant David Wylie Rintoul, who was killed in action on Oct. 21st in his twenty-sixth year, was the elder son of Mr. D. Rintoul, of College-road, Clifton. He was educated at Clifton College, and graduated M.B., Ch.B. of St. Andrews University in 1912. During 1912 and 1913 he filled the posts of house surgeon and house physician at the Bristol General Hospital. On resigning to join the Royal Army Medical Corps he received the thanks of the committee of that institution for the manner in which he had performed his duties. Lieutenant Rintoul received his commission early this year, and was attached to the Eastern Command before the outbreak of war.

THE BRITISH RED CROSS SOCIETY.—The summary of work for the week ending Nov. 4th states that the number of auxiliary home hospitals accepted by the War Office to date is 306, containing beds for 10,235, including 2158 beds accepted during the past week, and distributed among the army commands as follows: London, 659; Southern, 3051; Aldershot, 609; Eastern, 3082; Northern, 1506; Western, 1139; Irish, 189. A number of Voluntary Aid Detachments are being utilised in connexion with these hospitals. At the British Red Cross Hospital, Netley, this week it is hoped to have most of the nurses in their own huts, which will give a certain amount of spare accommodation for patients. At present four huts are full of soldiers from the Expeditionary Force and three with wounded Indians of the Expeditionary Force. A regular supply of fruit would be very acceptable for the native patients.

Gifts should be addressed to the Commandant, Sir Warren Crooke-Lawless,

Since last Tuesday evening 83 motor-cars have been despatched to the various centres; these included two lorries and two touring cars, the rest being motor ambulances. As far as offers of cars are concerned there are still a large number of people willing to provide a complete ambulance, and there are many others who are offering their cars for conversion. These, for the time being, have been asked to be placed on the reserve list. Chauffeurs have been registered each day, and at present sufficient are on the books to supply needs as they arise. When the appeal first appeared in the *Times* there were many people who immediately took steps to raise a local appeal for funds to purchase a motor ambulance. These will be accepted when the definite offer comes, but it is hoped that donors will allocate their cheques to running expenses rather than to additional cars. From Oct. 19th to Oct. 27th, inclusive, 9722 wounded were removed from trains to hospitals by the cars of the society, and 2000 were removed from hospitals to ships. From Oct. 15th to Oct. 27th, inclusive, the No. 2 convoy cars at Bethune carried 4116 wounded from the field hospitals to the clearing hospitals.

On the undermentioned dates the personnel was posted for service at the places named: Oct. 29th, Serbia, 6 doctors and 12 orderlies. Oct. 31st, Rennes, 6 doctors and 12 dressers. Nov. 1st, Boulogne, 8 doctors; Rouen, 2 dressers. Nov. 2nd, Boulogne, 4 doctors. Nov. 3rd, Boulogne, 2 doctors and 15 dressers. Oct. 31st, Rennes, 28 nurses. Nov. 1st, Boulogne, 30 nurses. The following nurses were also supplied for home service: Oct. 30th, Mansfield, 4. Oct. 31st, Ongar, 3; Southampton, 6; Wigan, 1. Nov. 2nd, Bristol, 1; Louth, Lincolnshire, 1; Margate, 2; Winchester, 2. Nov. 3rd, Bicester, 1. Gerrard's Cross, 5; Perth, 1; Reigate, 3. 5525 collecting boxes have been issued and 1454 returned, and the sum of £3083 13*s*. 3*d*. has been collected to date. No further boxes are to be issued for use in the streets or public places.

The following stores and transport have been despatched during the past week: Boulogne, 470 cases; Rouen, 197 cases; Calais, 96 cases; Dunkirk, 60 cases; St. Malo, 21 cases; Dinard, 7 cases; Paris, 3 cases; Tarbe, 3 cases; Serbia, 37 cases. Total, 894 cases and bales. These represent hospital stores, garments, and supplies of every sort and kind. The demands made from Boulogne and Calais have been exceptionally heavy, owing to the large amount of wounded arriving at these two places. Stores at Rouen have been largely replenished. Five ambulance ships have been regularly supplied with garments and comforts for the wounded crossing the channel. 70 hospitals in the British Islands have been supplied with what they have requisitioned for. Medical stores to the amount of £691 6*s*. 6*d*. have been purchased.

JOINT RED CROSS COMMITTEE.—The joint committee of the Order of St. John of Jerusalem in England and the British Red Cross Society which was announced in these columns last week has now met, and confirmed the election of the Hon. Arthur Stanley as its chairman and Sir H. C. Perrott as its vice-chairman.

EDINBURGH AND THE WAR.—At the half-yearly meeting of the University Court held on Oct. 30th the convenor of the business committee referred to the part taken by the University of Edinburgh in the war. It must, he said, be a matter of the greatest gratification to all her sons and daughters to know that their University had made a noble and magnificent response. There were no fewer than 12 members of the University staff at present serving in His Majesty's Forces. Principal Sir William Turner said with reference to the compilation of a roll of honour that several of his colleagues who had taken a prominent part in connexion with the arranging for the entry of these graduates and students into the military forces had already commenced the formation of a list, but it was obvious that it would not be easy to trace some 700 persons, and there would be a difficulty in obtaining a full list.—On the same afternoon a train arrived at Princes-street Station with 64 Belgian wounded on board. A staff of stretcher-bearers and a fleet of motor ambulances and motor-cars conveyed the patients to Craigleith Hospital. All the men had been in the battles of Nieuport and Dixmude, and as indicating the hard nature of the fighting the arrivals, except for some half-dozen men, were stretcher cases.—At a meeting of the Edinburgh Royal Infirmary managers held on Nov. 2nd, Lord Provost Inches presiding, Mr. Crole, K.C., referring to the recent visit to the infirmary of Sir Spencer Ewart, K.C.B., commanding the forces in Scotland, and Admiral Sir R. S. Lowry, K.C B., senior officer on the coast of Scotland, said the infirmary was taking the wounded sailors and soldiers on the same footing as ordinary patients; the War Office and Admiralty were not charged anything for the institution's care of them. Some of the wounded had had their clothes on for six weeks when they arrived at the infirmary. One of them, a reservist in the Gordon Highlanders, had mentioned that from the time he had left Aberdeen till he had been put to bed in the infirmary he had never had his clothes off. One could well understand the condition such clothes were in, and the consequence was that those soldiers required a new outfit on leaving the institution. The infirmary had no clothes to give them, but he was glad to say that on application to the Lord Provost's committee they were promptly supplied with clothes of all sorts.

PROFESSIONAL CLASSES WAR RELIEF COUNCIL.—In our last issue we announced the formation of this council, and indicated its objects and proposed methods. We are now asked to state that Mr. J. Pierpont Morgan has generously lent to the council Nos. 13 and 14, Prince's-gate, S.W., for a maternity nursing home for the period of the war, and that furniture and equipment are needed—house- and table-linen, blankets, cutlery, plate, screens, bassinettes, and baby-clothes. Offers of help in the way of gifts or loans should be made in the first instance to Mrs. Hills, 32, Prince's-gardens, London, S.W.

The home will have a voluntary medical staff of many well-known medical men and women, and a voluntary nursing staff of excellent certificated nurses. There is in it every requirement for perfect comfort and good nursing, and here the wives of professional men will be received throughout the war, and the period of distress ensuing, for the sum of two guineas a week during the time they are in the home, which sum will be absolutely inclusive. The council hope that medical men will assist them in making the existence of the home known to their patients. Many doctors are, it is well known, generously giving their services free to women who find themselves unable to meet the expense; but this generosity cannot continue on any large scale without seriously dislocating their own profession, therefore the establishment of this home should be the solution of many difficulties. It is also hoped in time to establish similar homes in the provinces, and this might well be done by local effort, in imitation of, and in coöperation with, the council's home in London.

The home will be open both to those who are recommended through the professional institutions and societies, and to those who apply direct to the Council. In the former case the weekly fee may be paid by the benevolent fund of the husband's institution, in the latter either by the patient or friends, or by the central fund of the council augmented by the special maternity fund which has been raised for the purpose by the members of the Eugenic Education Society.

The committee under which the maternity aid scheme is run consists of the following:—Dr. Mary Scharlieb (chairman), Sir Francis Champneys, Dr. H. C. Barnes, Dr. Maud Chadburn (senior obstetrician, New Hospital for Women), Mrs. Theodore Chambers, Mr. Chatfield Clarke (president Surveyors' Institution), Miss Graeves (matron, City-road Lying-in Hospital), Muriel, Lady Helmsley (chairman, London Day Nurseries Association), Dr. H. Simson, Dr. Samuel West (treasurer, Royal Medical Benevolent Fund), Dr. Florence Willey (Royal Free Hospital for Women), and Mrs. Hills.

SOLDIERS AND VENEREAL DISEASE.—A committee of the Liverpool Medical Institution, acting in concert with an influential lay committee, have entered upon a campaign against venereal disease. With the special object of warning young soldiers against the dangers which beset them from this cause the committee have now published two specially written pamphlets. One is entitled "The Dangers of Venereal Diseases," being an instructive inaugural address by Dr. Charles J. Macalister, chairman of the medical committee, and the other entitled "Some Dangers a Soldier may Avoid," written in a very simple and direct style, by Dr. R. W. MacKenna, honorary treasurer. The committee are anxious to interest commanding officers, chaplains, medical men, and others who are in a position and who would undertake to distribute these pamphlets among those for whom they are intended. They will be supplied free so far as funds admit. Correspondence is invited, and letters addressed to the Librarian, Liverpool Medical Institution, will receive attention.

British Nurses for French Military Hospitals.—An organisation under the title of "The French Flag Nursing Corps" has received a communication from the French Minister for War, dated Sept. 29th, asking for 300 fully trained British nurses to take service in the French military hospitals in the districts of Rouen, Le Mans, Rennes, and Nantes. Through the instrumentality of Sir Thomas Barclay and his niece, Miss Grace Ellison, a committee has been formed, which has been authorised by the Minister of War for France to select the nurses to be sent out and to undertake the necessary organisation. The French Ministry of War (Service de Santé section) has undertaken all financial responsibility for the nurses' salaries, travelling expenses, &c., the preliminary financial arrangements being in the hands of the French Consulate in London. Suitable provision has also been made for the supervision and comfort of the nurses. One detachment of nurses has already been despatched, and is now at work among the wounded in the military hospitals at Rouen, and further detachments are being sent out weekly as required. Applications from fully qualified nurses, particularly from those who can speak French, may be sent to Lady Barclay, 60, Nevern-square, S.W., or to Mrs. Bedford Fenwick, 431, Oxford-street, W. The medical advisers to the committee are Dr. R. Murray Leslie and Dr. J. Dundas Grant.

Chloroform in France: an Alleged Shortage.—In a letter which has appeared in the lay press it is stated that in various parts of France the hospitals for our wounded allies are in need of chloroform, and that amputations as well as minor operations have had to be performed without anæsthesia. We have not been officially informed of any such shortage of anæsthetics on the part of medical men working under the Croix Rouge, and we trust that the difficulty, if it exists, in securing adequate supplies of chloroform in France is at most only local and temporary. British manufacturers would, we are certain, take instant steps to meet any deficiency which was brought to their notice through responsible sources.

Asiatic Cholera in Austria.—According to official reports issued in the *Wiener Medizinische Wochenschrift* of Oct. 18th, 157 cases of Asiatic cholera all bacteriologically examined occurred from Oct. 6th to 12th in the Austrian empire. The first cases have invariably been imported through soldiers or fugitives from the seat of war. They refer to a few isolated cases in some 40 localities. Larger numbers were only reported from Budapest (6), Vienna (16), Neer-sandeck (16), and Gorlice (20). At the same time the hospitals of Vienna announced 27 cases of enteric fever and 175 of dysentery as having occurred from Oct. 4th to 10th.

Medical Attendance on Dependents of Irish Sailors and Soldiers.—The Irish committee of the British Medical Association has addressed a request to medical practitioners in Ireland to join in a scheme for giving free medical attendance to the dependents of sailors and soldiers on active service with His Majesty's forces. The details of the scheme are the same for Ireland as for Great Britain.

The International Board of Health.—We learn from a correspondent in Constantinople that this Board has practically ceased to exist as an international body, and is sitting as a Turkish body without foreign delegates.

The University of Paris and Belgian Students.—The authorities of the University of Paris have decided unanimously that the students who had matriculated and entered any Belgian university before the war could be received as duly matriculated students at various faculties of the University of Paris without further form. Belgian students at secondary schools will also be taken at the University of Paris if they have fulfilled the conditions precedent to matriculation and entry at one of their own universities. Those who have no school certificates in proof of this position can have recourse to diplomatic or consular agency in support of their claim to admission.

Medical News.

University of Oxford.—At a Congregation held on Oct. 29th the following degree was conferred:—

M.D.—Arthur Duncan Gardner, University College.

University of Cambridge.—At a Congregation held on Oct. 31st the following medical degrees were conferred:—

M.D.—A. Feiling, Pembroke; and A. Abrahams, Emmanuel.
M.B., *B.C.*—C. G. H. Campbell, St. John's.
M.B.—R. A. Ramsay, Caius.
B.C.—F. G. Lescher, Caius.

University of London.—Colonial Examinations.—At the First Examination for Medical Degrees held recently the following candidates were successful:—

Ceylon (Colombo).

John Robert Blazé and Simon Reginald Gunewardene, Ceylon Medical College.

Nobel Prizes.—It is now reported that the conferring of these prizes for the year 1914 for literature, medicine, chemistry and physics will be postponed until next year. Our Paris Correspondent referred to the prizes on Feb. 14th last, indicating that the French choice had fallen upon Professor Bouchard.

Society of Medical Officers of Health.—Dr. W. J. Howarth, medical officer of health of the City of London, will read a paper at the next meeting of this society on Nov. 13th on the subject of the Marking of Meat. The meeting will be held at 1, Upper Montague-street, Russell-square, London, W.C.

Queen's University of Belfast.—In connexion with the will of the late Mr. W. Gibson, chairman of the Goldsmiths' Company, Regent-street, London, and of Belfast, a sum of £10,000 has been left upon trust for investment to form a "Gibson Scholarship Fund" at Queen's College, Belfast, of which the income is to be applied in the encouragement of education in agriculture and the management of land for profit by the establishment of "Gibson Scholarships" for resident undergraduates of the College, being sons of farmers in the counties of Antrim and Down. When the University was established Mr. Gibson presented a silver mace. By his will he has bequeathed £1000 to the Royal Victoria Hospital, Belfast, for a "Sarah McLees Cot," in memory of his late niece. On Oct. 21st a meeting was held in the Great Hall of the University to consider the call of duty in the present national exigency. Speeches were made by senators and professors urging the students to go to the front. A resolution was passed recommending that efforts should be made to have a special University company organised in one of the local service battalions, and that all members of the University who are fit for military service should consider the propriety in the present emergency of suspending their customary amusements and either joining the proposed University company or applying for admission to the officers' training corps. A movement is also on foot to form a Queen's University veterans' corps, the age-limit of those joining to be between 38 and 60 years, and graduates and other alumni bordering on these ages have been asked to attend a meeting in the University on Oct. 29th to discuss the matter.

Royal Medical Benevolent Fund.—At the last meeting of the committee 37 cases were considered and grants amounting to £303 voted to 32 of the applicants. The following is a summary of the cases relieved:—

Daughter, aged 42, of M.R.C.S. Eng. who practised at Shrewsbury Training for rescue work. Mother died recently and the little income she had was only for life. Applicant required a little help until able to commence work. Voted £5.—Widow, aged 42, of L.R.C.P. & S. Irel. who practised in Ireland and Australia. Usually earns her own living as a teacher of languages; was in Berlin at a post when the war broke out and had to return to England without her belongings or money. She proposed to go to Madrid where she could obtain work. Previous grant, £10. Voted £5 as gift and £7 as a loan.—Widow, aged 66, of M.R.C.S. Eng. who practised at Notting Hill. Has five daughters, one a trained nurse who has had to give up her post to nurse her mother who is suffering from malignant disease in the breast. Try to make a little by letting room. Relieved 14 times, £176. Voted £5.—M.R C.S., aged 81, who practised at West Kensington. Has the old-age pension and a pension from another charity. Is blind. Has four children, the eldest of whom is practically blind and the others unable to help. Relieved twice, £14. Case referred for further inquiry and the sum of £5 placed at the disposal of the visitor.—Widow, aged 63, of M.B. Glasg. who practised at Carnarvon. Unable to work and only income £16 from investments and 5s. per week temporarily from brother. Three children married and unable to help. Relieved twice, £12 Voted £12 in 12 instalments.—Widow, aged 46, of L.S.A. Eng. who practised at Leyton. Left with five daughters, ages 9 to 16 years. Very delicate and only able to do very light work. Hopes to take in paying guests and wishes to remove to a more suitable house. Voted £10 towards removal expenses.—Widow, aged 39, of L.R.C.S. & P. Irel. who practised in Monmouthshire and New South Wales. Acts as working housekeeper at about £15 per year and her youngest child is allowed to live with her. Eldest child, aged 12 years, adopted by grandparents. Wants assistance towards the education of daughter aged 11 years. £10 voted through the Guild who were also going to assist.—Widow, aged 67, of M.B., B.S. Lond. who practised at Islington. Only very limited means. Eldest son used to help, but owing to the falling off of his business unable to continue. Endeavouring to obtain an Epsom College pension. Voted £12 in 12 instalments.—Daughter, aged 48, of M.D. Glasg. who practised at Glasgow. Endeavours to make a living by letting rooms at a seaside resort, but owing to short season in consequence of the war is unable to meet her expenses. Voted £10.—Daughter, aged 35, of M.R.C.S. who practised at Streatham. Very delicate and only a few pounds per annum from an investment. Supplements this by painting, but no market for pictures at present. Voted £5.—Widow, aged 58, of L.R.C.P. Dub. who practised in London. Endeavours to make a living by taking boarders and nursing mental cases, but in consequence of recent illness has not been able to attend to this thoroughly. Voted £10.—Daughter, aged 56, of M R.C.S. Eng. who through ill-health was unable to practise. She is suffering from carcinoma of the breast and too ill to work. Only income £16 10s. per annum. Voted £12 in 12 instalments.—Widow, aged 60, of M.D. Glasg. who practised at Burnham and was an annuitant of the Fund. She is a confirmed invalid and unable to help herself. Only small income provided by friends. Voted £12 in 12 instalments.—Widow, aged 35, of M.R.C.S. Eng. who practised at Bexhill-on-Sea. One child 4 months old. Left totally unprovided for. Voted £3 and the case referred for report.—Widow, aged 35, of M.R.C.S. Eng. who practised at Monmouth and was killed at the front. Widow left with two children, 3½ and 1 year. Voted £25.—Widow, aged 58, of M.R.C.S. Irel. who practised at Newnham-on-Severn and died two years ago, leaving widow and family penniless. Two daughters, one of whom is a nurse at the front and one son at the front. Only income 15s. per week allowed by children. Relieved once, £10. Voted £10 in two instalments.—Widow, aged 42, of M.B. Edin. who practised at Sheffield. Health very bad and unable to obtain suitable employment. One son being educated by grandparents. Promise of light work when a little stronger. Relieved once, £10. Voted £10.—Widow, aged 49, of M.R.C.S. Eng. who practised at Bexhill. Tries to earn a living by taking boarders, but it requires six to make it pay and only has three at present. Two daughters, ages 19 and 10½; eldest a clerk who is only able to contribute £12 per annum. Relieved twice, £20. Voted £10.—Daughter, aged 60, of M.R.C.S. Eng. who practised at Hackney. Applicant is blind. Only income an annuity from another society and £12 from friends. Relieved four times, £34. Voted £12 in 12 instalments.—Daughter, aged 61, of M.D. Lond. who practised in London. Is quite blind. Only income a pension of £20 from the Blind Society. Relieved twice, £18. Voted £12 in 12 instalments.—Widow, aged 65, of L.R.C.P. Edin. who practised at Port Carlisle. Suffers from cardiac asthma and recently operated on for carcinoma of the breast. Left without any means, and of the five children only youngest daughter able to help with 10s., for which she has her board. Relieved once, £12. Voted £12 in 12 instalments and referred to the Guild.—Widow, aged 59, of M.D. Dub. who practised at Acton. Endeavours to earn living by taking boarders, but has not been successful lately. Son, who usually pays rent for her, unable to continue owing to war. Relieved once, £10. Voted £5.—Widow, aged 55, of M.R.C.S. Eng. who practised at Kensington. Successfully earned a living of late by taking boarders, but the four she recently had have all joined the army so she is now without. Relieved once, £10. Voted £10 in two instalments and referred to the Guild.—Widow, aged 63, of M.R.C.S. Eng. who practised at Newtown, North Wales. Very poor health and heart trouble. Eldest son abroad has in the past paid her rent, but is now unable to do so on account of ill-health. Six children, the youngest unable to work on account of ill-health and the others unable to help. Relieved six times, £55. Voted £15.—Daughter, aged 52, of L.R.C.P. Lond. who practised at Birmingham. Endeavours to make a living by letting rooms, but owing to short season has not made much this year. Eyesight very bad. Relieved three times, £32. Voted £12 in 12 instalments.—Daughter, aged 55 years, of M.R.C.S. Eng. who practised in London. Suffers from chronic glaucoma and general bad health. Only income £24 per year. Relieved six times, £55. Voted £12 in 12 instalments.—Widow, aged 52, of L.R.C.S. Edin. who practised on the West Coast of Africa. Endeavours to earn a living by letting rooms and nursing. One invalid daughter at home and two sons abroad unable to assist. Relieved three times, £36. Voted £12 in 12 instalments.—Daughter, aged 68, of M.R.C.S. Eng. who practised at Keynsham. All money lost by the foreclosure of mortgages. Tries to earn a little by painting, but has found it difficult recently in obtaining clients. Relieved once, £12. Voted £18 in 12 instalments.—Widow, aged 55, of M.R.C.S. Eng. who practised at Donhead, and who had been a recipient of help from the Fund. Unable to work. Has one daughter unable to assist. Since husband's death a sister has assisted her, but cannot now continue. Voted £2 and referred to the Guild for report.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, London, W.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BANBURY, R. A., M.R.C.S., L.R C.P. Lond., has been appointed Assistant Medical Officer to the Woolwich Board of Guardians.

BEGG, R. CAMPBELL, M.B., Ch.B. Edin., has been appointed Resident Surgeon to the Surgical Out-patient Department at the Edinburgh Royal Infirmary.

CARGIN, HERBERT M., M.D. Edin., D.P.H., has been appointed Medical Officer of Health of West Hartlepool.

DICKIE, J. K. MILNE, M.D., F.R.C.S. Edin., has been appointed Special Clinical Assistant to the Ear and Throat Department at the Edinburgh Royal Infirmary.

ESCHWEGE, F. S., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Rowfant District of the county of Sussex.

EWART, G. A., F.R.C.S Eng., has been appointed Assistant Surgeon to St. George's Hospital.

FEDDEN, W. FEDDE, F.R.C.S. Eng., has been appointed Surgeon to St. George's Hospital.

FULLARTON, JAMES, M.B., C.M. Glasg., has been appointed Medical Officer for the Parishes of Colvend and Kirkbean.

HALLEY, T. C., M.B., Ch.B. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Stanford-le-Hope District of the county of Essex.

HENRY (MACENRI), JOHN P., M.D., B Ch. Dub., has been appointed Professor of Ophthalmology and Otology in University College, Galway

ROUSE, T., M.D. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Sligo District of the county of Sligo.

HUNTER, R., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Dodworth.

MATHEWSON, G. D., M.B., Ch.B. Edin., F.R.C.P. Edin., has been appointed Temporary Assistant Physician at the Edinburgh Royal Infirmary.

NIMBKAR, V. D., L.R.C.P. & S. Edin., L.R.F.P.S. Glasg., has been appointed Ophthalmic House Surgeon at the Leeds General Infirmary.

NOEL, H. L. C., M.R.C.S., has been appointed Resident Assistant Surgeon to the Marchioness of Bute's Naval and Military Hospital, Mount Stuart, Isle of Bute, N.B.

REID, M. A., M.B., F.R.C.S. Edin., has been appointed Clinical Assistant in the Ear Department at the Edinburgh Royal Infirmary.

RODGER, T. RITCHIE, M.B., F.R.C.S. Edin., has been appointed Honorary Resident House Surgeon in the Eye Wards at the Edinburgh Royal Infirmary.

SOMERVILLE, CHARLES, M.B., Ch.B. Edin., D.P.H., has been appointed Interim Medical Officer for the Burgh of Bonnyrigg.

WHAITE, JOHN HENRY, M.D., B.Ch. Dub., has been appointed Medical Officer for the Heavitree District by the Exeter Board of Guardians.

WYLDE, R. P., L.M.S.S.A Lond., has been reappointed Medical Officer of Health for the Hollingworth Urban District Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

ALTON, HANTS, LORD MAYOR TRELOAR CRIPPLES' HOSPITAL AND COLLEGE.—Two Female Assistant Medical Officers for six months. Salary at rates of £120 and £100 per annum, with board, residence, and laundry.

BELFAST MUNICIPAL SANATORIUM, Whiteabbey.—Resident Medical Superintendent. Salary £500 per annum, with board and residence.

BEXLEY, KENT, LONDON COUNTY ASYLUM.—Locum Tenens Medical Officer. Salary 6 guineas per week, with quarters, board, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

BIRMINGHAM CITY HOSPITAL, Lodge-road.—Assistant Resident Medical Officer. Salary £200 per annum, with board, residence, &c.

BIRMINGHAM CORPORATION.—Female Medical Officer for Infant Consultation Work. Salary £300 per annum.

BIRMINGHAM GENERAL HOSPITAL.—House Governor and Secretary. Salary £500 per annum.

BIRMINGHAM UNION.—DUDLEY-ROAD INFIRMARY: Third Assistant Medical Officer and Fourth Assistant Medical Officer. Salary at rate of £170 and £160 per annum respectively. ERDINGTON INFIRMARY AND COTTAGE HOMES: Assistant Medical Officer. Salary at rate of £200 per annum. SELLY OAK INFIRMARY: Assistant Medical Officer. Salary at rate of £180 per annum. Apartments, rations, laundry, and attendance in each case.

BOLTON INFIRMARY AND DISPENSARY.—Second House Surgeon. Salary £120 per annum, with apartments, board, and attendance.

BRADFORD CITY EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £350 per annum.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRADFORD ST. LUKE'S HOSPITAL AND UNION HOUSE.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with rations, apartments and washing.

BRISTOL GENERAL HOSPITAL.—Obstetric Officer and House Surgeon to Special Departments for six months. Salary at rate of £120 per annum, with board, residence, &c.

Canterbury, Kent County Asylum, Chartham.—Junior Assistant Third Medical Officer, unmarried. Salary £250 per annum, with quarters, board, washing, &c.

Cardiff, King Edward VII. Welsh National Memorial Association.—Assistant Tuberculosis Physicians. Salary £300 per annum.

Carshalton, Surrey, Queen Mary's Hospital for Children.—Assistant Medical Officers. Salary at rate of £250 per annum, with board, lodging, and washing.

Chichester, Royal West Sussex Hospital.—House Surgeon, unmarried. Salary £110 per annum, with board, residence, and washing.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

City of Westminster Union Infirmary, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

Derby Borough Isolation Hospital and Sanatorium.—Resident Medical Officer. Salary £200 per annum, with board and residence.

Derby, Derbyshire County Council.—Assistant Tuberculosis Officer. Salary £400 per annum.

Dorchester, Dorset County Hospital.—House Surgeon, unmarried. Salary £150 per annum, with board and residence.

Edmonton Infirmary.—Second Assistant Medical Officer, unmarried. Salary £160 per annum, with residential allowances.

Fareham, Hants County Asylum.—Third Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

Gloucester, Gloucestershire Royal Infirmary and Eye Institution.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

Great Northern Central Hospital, Holloway-road, N.—Resident Medical Officer. Salary £120 per annum, with board, residence, and laundry. Also House Physician and House Surgeon for six months. Salary a rate of £60 per annum, with board, residence, and laundry.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £140 per annum, with board, lodging, and washing.

Greenhithe, Ingress Abbey Military Hospital.—House Surgeon. Salary £150 per annum, with board, lodging, and laundry.

Halifax Union Poor-Law Hospital, Salterhebble.—Resident Medical Officer. Salary £120 per annum, with apartments, rations, and washing.

Hereford County and City Asylum.—Junior Assistant Medical Officer. Salary £200 per annum and all found except stimulants.

Hospital for Consumption and Diseases of the Chest, Brompton.—House Physician for six months. Salary 30 guineas.

Huddersfield Royal Infirmary.—Senior and Junior Assistant House Surgeons. Salary £80 per annum each, with board, rooms, and washing.

Leeds Hospitals for Infectious Diseases and Tuberculosis.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £150 per annum, with board, lodging, and washing.

Leicester, Leicestershire Education Committee.—Temporary Assistant School Medical Officer. Salary at rate of £300 per annum.

Lincoln, City of.—Assistant Medical Officer of Health. Salary £250 per annum, with board and apartments.

Liverpool, Board of Control.—Assistant Medical Officer for State Institution for Mental Defectives near Liverpool. Salary not less than £300 per annum, with unfurnished house.

Liverpool University.—Assistant Lecturer and Demonstrator in Anatomy. Salary £175 per annum.

London Homœopathic Hospital, Great Ormond-street and Queen-square, Bloomsbury, W.C.—Assistant Physician.

Macclesfield, Parkside Asylum.—Medical Superintendent. Salary £650 per annum.

Maidstone, Kent County Asylum.—Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, quarters, attendance, washing, &c.

Manchester Children's Hospital, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

Manchester, City of.—Assistant Tuberculosis Officer. Salary £350 per annum.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester Hospital for Consumption and Diseases of the Throat and Chest.—Assistant Medical Officer for Crossley Sanatorium, Delamere Forest, Cheshire. Salary £100 per annum, with board, apartments, and laundry.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester Royal Eye Hospital.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

Middlesbrough, North Ormesby Hospital.—House Surgeon. Salary £120 per annum, with board, washing, and attendance.

Middlesbrough, North Riding Infirmary.—Junior House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and laundry.

Middlesex Hospital, W.—Resident Medical Officer, unmarried.

Metropolitan Hospital, Kingsland-road, N.E.—Temporary Assistant Surgeon.

Mount Vernon Hospital for Consumption and Diseases of the Chest, Northwood.—House Physician. Salary £100 per annum, with board, residence, and washing.

National Hospital for Diseases of the Heart, Westmoreland-street, W.—Honorary Assistant Physician for Out-patients.

Newcastle-upon-Tyne, Hospital for Sick Children.—Senior Medical Officer. Also Junior Medical Officer. Salary £100 and £80 per annum respectively, with board, lodging, and laundry.

New Hospital for Women, Euston-road.—Female House Physician, Two House Surgeons, Obstetric Assistant (board, lodging, and laundry). Also Assistant Pathologist. Salary £50. All for six months.

Newport (Mon.). Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

Northampton County Borough.—Clincal Tuberculosis Officer (temporary). Salary £350 per annum.

Nottingham Children's Hospital.—Female House Surgeon for six months. Salary at rate of £130 per annum, with apartments, board, and washing.

Nottingham General Dispensary.—Resident Surgeon, unmarried. Salary £250 per annum, with apartments (not board), attendance, light, and fuel.

Nottingham General Hospital.—Assistant House Surgeon for six months. Salary at rate of £100 per annum, with board, residence, and laundry. Also Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

Oldham Royal Infirmary.—Third House Surgeon for six months. Salary at rate of £100 per annum, with board and residence.

Paddington Infirmary 285, Harrow-road, Paddington, W.—Assistant to Medical Superintendent of Infirmary and Medical Officer of Workhouse for six months. Salary at rate of £250 per annum, with board, lodging, and washing.

Preston, County Asylum, Whittingham.—Junior Assistant Medical Officer, also Assistant Medical Officer to act also as Pathologist, unmarried. Salary commencing £250 per annum, with board, apartments, &c.

Preston Royal Infirmary.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

Royal Waterloo Hospital for Children and Women, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

Ryde, Royal Isle of Wight County Hospital.—Resident House Surgeon, unmarried. Salary £115 per annum.

St. Albans, Herts County Asylum, Hill End.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, with board, lodging, and washing.

Salford Royal Hospital.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

Salford Union Infirmary.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

Sheffield City Hospitals (Infectious Diseases and Tuberculosis).—Assistant Medical Officer. Salary £180 per annum, with board, lodging, and washing.

Sheffield, East-End Branch of the Children's Hospital.—House Surgeon. Salary £120 per annum, with board and residence.

Sheffield Royal Hospital.—Assistant House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

Sheffield Royal Infirmary.—Two House Surgeons and Assistant House Physician for six months. Salary £100 per annum each, with board and residence.

Shoreditch Infirmary, Hoxton-street, N.—Junior Assistant Medical Officer for six months. Salary £150 per annum, with board, apartments, and washing.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

Stirling District Asylum, Larbert, N.B.—Female Third Assistant Medical Officer. Salary £140 per annum, with board, &c.

Stoke-on-Trent, Infectious Diseases Hospital, Bucknall.—Female Assistant Medical Officer. Salary £150 per annum, with apartments, board, washing, and attendance.

Sunderland Royal Infirmary.—Junior House Surgeon. Salary £100 per annum, with board, residence, and laundry.

Tunbridge Wells General Hospital.—House Physician, unmarried. Salary £100 per annum, with board, residence, &c.

University of London.—University Chair of Anatomy at King's College. Salary £600 per annum. Also University Chair of Physiology at London Hospital Medical College. Salary £600 per annum.

Wakefield, West Riding Asylum.—Assistant Medical Officer. Salary £230 per annum, with apartments, board, washing, and attendance. Also Female Assistant Medical Officer. Salary £235 per annum. Also Locum Tenens Assistant Medical Officer. Apartments, board, travelling expenses. Salary as arranged.

Walsall and District Hospital.—Senior House Surgeon and Junior House Surgeon and Anæsthetist. Salary £150 and £110 per annum respectively, with board, residence, and laundry.

Wandsworth Union Infirmary, Ouseley-road, Balham, S.W.—Second Assistant Medical Officer, unmarried. Salary at rate of £150 per annum, with board, lodging, and washing.

West Ham and Eastern General Hospital, Stratford, E.—Senior House Physician. Salary £120 per annum, with board, residence, and washing.

Women's Hospital for Children, 688, Harrow-road, W.—Female Assistant Surgeon.

Worcester County and City Asylum, Powick, near Worcester.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Hounslow, in the county of Middlesex; and at Bridge of Allan, in the county of Stirling.

The Home Secretary gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for the Sheriffdom of Forfar, to be attached more particularly to the Forfar District. Applications should be addressed to the Private Secretary, Scottish Office, not later than Nov. 25th.

Births, Marriages, and Deaths.

BIRTHS.

Griffiths.—On Oct. 29th, at Wylcwm House, Knighton, Radnorshire, the wife of John A. K. Griffiths, M.B., of a son.

Gunn.—On Oct. 31st, at Tower Gardens-road, Tottenham, N., the wife of Andrew Rugg Gunn, M.B., Ch.B. Edin., of a daughter.

Speirs.—On Oct. 29th, at Old Kent-road, S.E., the wife of T. Orr Speirs, M.D. Glasg., a son.

MARRIAGES.

Menzies—Potter.—On Oct. 31st, at St. George's Church, Headstone, Harrow, Dr. John Louis Menzies, of Aberdeen and Croydon, to Edith May Potter, second daughter of Mr. J. I. Potter, of Harrow.

Ryle—Scully.—On Oct. 23rd, at St. Pancras, John Alfred Ryle, M.B., R.A.M.C., S.R., to Miriam Power, second daughter of William Charles Scully, C.C. and R.M. of Port Elizabeth.

DEATHS.

Crowther.—Killed in action on Oct. 18th with British Expeditionary Force, as Motor-cycle Despatch Rider, Sydney Nelson Crowther, M.R.C.S., L.R.C.P., of Netherne Asylum, Merstham, aged 39 years

Shields.—Killed in action Oct. 25th-26th, Lieutenant Hugh John Sladen Shields, R.A.M.C., Irish Guards, aged 27 years.

Sydney.—On Oct. 28th, Henry Sydney, M.D., of Strathclyde House, Hounslow.

Tasker-Evans.—On Nov. 1st, suddenly, John Tasker Tasker-Evans, M.D., Upton House, Hertford, aged 71 years.

Wardleworth.—On Oct. 24th, at Havre, Lieutenant Douglas Wardleworth, R.A.M.C., of St. Nicholas, Sheringham, while on active service.

Wallis.—On Oct. 27th, at St. Minver, Leiston, Suffolk, Edward Darby Wallis, L.S.A., M.R.C.S., aged 67 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

Arnold, Edward, London.

The Infant: Nutrition and Management. By Eric Pritchard, M.A., M.D. Oxon., M.R.C.P. Lond., Physician to the Queen's Hospital for Children. Price 3*s.* 6*d.* net.

Mentally Defective Children. By Alfred Binet and Th. Simon, M.D. Authorised translation by W. B. Drummond, M.B., C.M., F.R.C.P. Edin. Appendix on Binet-Simon Tests by Margaret Drummond, M.A., and Introduction by Professor A. Darroch. Price 2*s.* 6*d.*

Baillière, Tindall, and Cox, London.

A Manual of Physiology, with Practical Exercises. By G. N. Stewart, M.A., D.Sc., M.D. Edin., D.P.H. Camb., Professor of Experimental Medicine in Western Reserve University. Seventh edition. Price 18*s.* net.

Syphilology and Venereal Disease. By C. F. Marshall, M.D., M.Sc., F.R.C.S. Third edition. Price 10*s.* 6*d.* net.

Bale, John, Sons, and Danielsson, London.

Notes on Dental Surgery and Pathology. Intended as a Ready Work of Reference for the busy Practitioner and a Note-book for Students. Interleaved with blank pages. Over 150 illustrations. By T. W. Widdowson, L.D.S. R.C.S. Eng. Price 10*s.* 6*d.* net.

Bell, G., and Sons, Limited, London.

Sick-room Cookery Simplified, with Suggestions for Diet. By Mabel Baker.

Physiology and Hygiene for Girls' Schools and Colleges. By Elizabeth Sloan Chesser, M.B., Lecturer to the Institute of Hygiene. Price 2*s.*

Black, Adam and Charles, London.

Pasteur and After Pasteur. By Stephen Paget, F.R.C.S., Honorary Secretary, Research Defence Society. With 8 page illustrations. Price 3*s.* 6*d.* net.

Churchill, J. and A., London.

Dr. Chavasse's Advice to a Wife. Revised by Stanley Dodd, M.B., F.R.C.S. Sixteenth edition. Price 1*s* 6*d.* net.

The Midwife's Companion. By Félicie Norton. Price 1*s.* net.

Frowde, Henry, and Hodder and Stoughton, London.

The Pharmacy Handbook. By F. W. Crossley-Holland, F.C.S. Price 6*s.* net.

Green, W., and Sons, Edinburgh and London.

The Blood: A Guide to its Examination and to the Diagnosis and Treatment of its Diseases. By G. Lovell Gulland, M.A., B.Sc., M.D., F.R.C.P.E., and Alexander Goodall, M.D., F.R.C.P.E. With 28 illustrations and 16 coloured plates. Second edition. Price 15*s.* net.

Kegan Paul, Trench, Trübner, and Co., London, Paris, and New York.

Mediterranean Winter Resorts, with special articles on the Principal Invalid Stations by Resident English Physicians. By Eustace Reynolds-Ball, F.R.G.S. With map and diagrams. Vol. I.: South Europe. Seventh edition, revised, and in part rewritten. Price 5*s.* net.

Laurie, T. Werner, Limited, London.

Secrets of the German War Office. By Dr. Armgaarad Karl Graves, late Spy of the German Government. Price 2*s.* net.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

THE "LONDON PANEL COMMITTEE GAZETTE."

We have received from members of the London Panel Committee copies of the first number of the *London Panel Committee Gazette*, a pamphlet of four pages, which is stated on its first page to be "circulated only to practitioners on the London panel," and which ostensibly is issued to those gentlemen by the London Panel Committee. We say "ostensibly" because, although a note on the last page intimates that communications should be addressed to the secretary of the Panel Committee, it is difficult to believe that that body, having before it a copy of the "Gazette," deliberately, and with anything like unanimity, sanctioned its publication. Regarded as an official publication it is a surprising document. A page of short paragraphs, entitled "What We Think," is composed in a style which many readers will find offensive. This is followed by observations upon "Economy in Prescribing," apparently prompted by the London Pharmaceutical Committee having asked the Panel Committee to make investigations under Article 40 of the Medical Benefit Regulations into certain cases of alleged extravagant prescribing. Allusion to this reference from the Pharmaceutical Committee is followed by various paragraphs on over-prescribing, including a statement that "a rapid scrutiny of the prescriptions suggests that a considerable portion of the charges upon the drug fund could have been avoided without loss of efficiency, and even with positive advantage to insured patients, by properly directed economy in prescribing." The charges of over-prescribing referred to the Panel Committee are grave matters for careful and judicial consideration, and if the committee has really formed an opinion after a "rapid scrutiny" of the prescriptions involved, we cannot commend the policy of making known views so arrived at. We hope, however, and indeed believe, that the Panel Committee has not either formed an opinion prematurely upon the cases in question or sanctioned any intimation to that effect, and that the observation quoted is intended to be of general rather than particular application. If so, however, it is expressed in unfortunate terms. The duty of the Panel Committee is, after hearing both sides—that of the Pharmaceutical Committee and that of the practitioners—to report to the Insurance Committee, which in its turn will deal with the cases referred upon their individual merits. Its duty, so far as particular cases are concerned, is limited to this. There should be no harm, as, we believe, will be generally agreed, in a Panel Committee making known to practitioners on the panel, as a matter of general information, its views upon over-prescribing and the principles upon which it will act in judging cases in which this is alleged. The information should, however, be contained in circulars of more dignified tone, and more in accordance with usage than the first number of the *London Panel Committee Gazette*.

SOLUROL.

To the Editor of THE LANCET.

Sir,—I would be obliged if any medical man who has used "Solurol" in the treatment of gout and rheumatism would state his experience of it in your columns.

I am, Sir, yours faithfully,
Margate, Nov. 4th, 1914. P. Newell.

INSURANCE AGAINST TWINS.

In The Lancet of March 7th, 1914, p. 727, we reported that a popular weekly paper had promised to give £5 to every mother of twins born in the United Kingdom, the Channel Islands, and the Isle of Man during the month of July, 1914, on condition that applicants sent with their application a certain number of coupons cut from weekly issues of the paper. We now learn that over 500 applications for the bounty have been received.

THE PLAGUE IN ANTIQUITY.

THE actual nature of the various plagues recorded as having occurred in antiquity seems a never-ending source of discussion. For a long time they were all regarded as identical with pestis bubonica. Recently efforts have been made to show that the plague of Athens in the time of Pericles was not plague, but typhus fever or cholera. (See THE LANCET, Oct. 17th, 1914, p. 968.) Dr. D. Fraser Harris, in a paper reprinted from the *Canadian Medical Association Journal* for July, 1914, discusses the significance of the five golden "emerods" and the five golden mice that were placed in the Ark, which, in the light of our present knowledge of bubonic plague, suggest that the plague referred to in I. Samuel VI. was bubonic plague. The word "emerods," an old form of "hæmorrhoids," occurs in several places in scripture, which suggest that it was used more or less generally for a small tumour—in this case, the buboes of plague. The mice suggest a shrewd appreciation of the connexion between the plague of mice and the subsequent epidemic disease that was characterised by the presence of buboes.

THE CENSUS OF LONDON.

ALL the varied information relating to the County of London collected at the Census of 1911 has now been brought conveniently together in the form of a separate Blue-book and presented to both Houses of Parliament. A table devoted to statistics of the occupations of the inhabitants gives the following figures under the heading of "Medical":—Physicians, surgeons, and registered practitioners, 4488 males. 147 females; dentists (including assistants), 1179 males, 56 females; midwives, 475; sick nurses and invalid attendants, 327 males, 16,126 females; subordinate medical service, 828 males, 863 females.

SELF-CURE.

A READER in the North of England sends us the following extract from the *Leeds Post* of Nov. 2nd:—

> The Self-Cure Remedy Company (Limited) have been registered as a private undertaking, with a capital of £250 in £1 shares, to deal in hygienic appliances and literature, herbal and patent medicines, to teach the principles of hygiene, &c. The subscribers are Mr. G. Hall and Miss E. Horden, both residing at Newcastle-on-Tyne.

We agree with our correspondent that the business appears to be unqualified medical practice of a not particularly blushing kind, but so long as the lady and gentleman who conduct it avoid the assumption of medical titles they are within the law—as at present constituted.

"THE LANCET" HYGIENIC TESTS FOR GAS FIRES.

IN our issue of Oct. 17th last we recorded the results of the hygienic testing of three gas fires submitted to us by the Planet Foundry Co., Limited, of Guide Bridge, near Manchester. They were quite satisfactory, but we suggested that "the maximum consumption of gas in these stoves might with advantage be increased in order to extend upwards the incandescence of the 'radiants.'" We are now informed that these fires are fitted with "a gas and air adjuster," which can be operated to suit the varying pressures and qualities of the gas supplied. This we find to be the case. A further important point about this adjuster is that it can be set so as to avoid the irritating "purr" so common to gas fires, and the result is practically a quiet fire. The principle on which this adjuster works is based upon the distribution of the gas into small parallel streams, which is effected by means of a screw-controlled plug, the periphery of which consists of a series of graduated grooves. These work in a sleeve having an internal collar of definite length. The orifices from which the gas issues can thus be enlarged or reduced as the plug is moved backward or forward. We welcome these attentions to detail, for these things do much to improve gas as a heating agent for domestic purposes.

SHRAPNEL.

THE word is on everybody's tongue, but it is not everybody who knows its origin. Henry Shrapnel, an English artillery officer, the youngest son of a family of nine children, was born on June 3rd, 1761, and entered the Royal Artillery, and visited Newfoundland, Gibraltar, and the West Indies while still a mere boy. He served also in the army of the Duke of York in Flanders, and was wounded at the siege of Dunkirk in September, 1793, and now just 121 years afterwards his invention is in great use not many miles from the very same place. He devoted all the time and money he could spare to inventions in gunnery, and his case-shot or shell was recommended by the Board of Ordnance for adoption into the service. He was afterwards employed at the Royal Arsenal at Woolwich perfecting his inventions. In 1804 his shell was employed in the attack on Surinam, and favourably reported upon, and he later received flattering testimonials as to its efficacy from the Duke of Wellington, Admiral Sir Sydney Smith, and other notable commanders.

D. T. I.—We find that no book is in existence to supply the place of Porter and Godwin's useful "Surgeon's Pocket Book." It is much to be regretted that no authority in the Army Medical Service has brought this work up to date.

J. O.—British Red Cross Society, Manchester Branch. Apply to Major J. Sington, 20, Princess-street, Manchester.

Dr. Mary Cowhy.—The address of the Medical Defence Union is 4, Trafalgar-square, London, W.C.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Mr. W. L. Balls and Mr. F. S. Holton: Analyses of Agricultural Yield. Part I., Spacing Experiments with Egyptian Cotton (communicated by Dr. F. F. Blackman).—Mr. J. McIntosh and Mr. P. Fildes: The Fixation of Arsenic by the Brain after Intravenous Injections of Salvarsan (communicated by Prof. W. Bulloch).—Mr. A. E. Everest: The Production of Anthocyanins and Anthocyanidins, Part II. (communicated by Prof. F. Keeble).—Mr. H. M. Woodcock and Mr. G. Lapage: Living Observations on the Life-cycle of a New Flagellate-helkesimastix Fæcicola: together with Remarks on the Question of Syngamy in the Trypanosomes (communicated by Prof. S. J. Hickson).—Mr. S. W. Patterson: The Antagonistic Action of Carbon Dioxide and Adrenalin on the Heart (communicated by Prof. E. H. Starling).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

WEDNESDAY.

SECTION OF SURGERY: SUB-SECTION OF PROCTOLOGY (Hon. Secretaries—P. Lockhart Mummery, W. Sampson Handley): at 5.30 P.M.

Mr. Aslett Baldwin: (1) Case of a Woman, aged 76½, after Abdomino-perineal Excision of the Rectum; (2) Notes of a Case of Gumma of Rectum in a Woman.

Mr. Ivor Back: Notes of a Case of Œdema of the Sigmoid Mesocolon.

Mr. Sampson Handley: Case of Apparently Inoperable Carcinoma of the Rectum becoming Operable under Radium Treatment.

Paper:

Mr. P. Lockhart Mummery: Injuries to the Bowel from Shell and Bullet Wounds.

FRIDAY.

CLINICAL SECTION (Hon. Secretaries—Thomas H. Kellock, David Forsyth): at 8 30 P.M.

Clinical Cases will be shown at 8 P.M.

Paper:

Mr. W. G. Spencer: Case of Retroperitoneal Prolapse of the Spleen into the Left Loin.

HUNTERIAN SOCIETY, Barbers' Hall, Monkwell-street, E.C.

WEDNESDAY.—8.30 P.M., Council Meeting. 9 P.M., Papers:—Dr. A. Morison: Pernicious Anæmia.—Dr. A. W. Robertson: The Toxic Anæmias of General Practice.—Followed by a discussion.

SOUTH-WEST LONDON MEDICAL SOCIETY, Bolingbroke Hospital, Wandsworth Common, S.W.

WEDNESDAY—9 P.M, Mr. J. M. G. Swainson: Deformities, with Special Reference to Treatment. (Lantern Demonstration.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY.—5 P.M., Fitz-Patrick Lecture:—Dr. C. A. Mercier: Leper Houses and Mediæval Hospitals.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. [illegible] P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. J. B. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Nose, Throat, and Ear (Mr. H. D. Gillies). X Rays and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 4.30 P.M., Special Demonstration of Selected Cases of Children's Diseases (Dr. T. R. Whipham). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:- Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Buzzard: Disseminated Sclerosis.

FRIDAY.—3.30 P.M., Lecture:—Dr. H. Tooth: Clinical Cases.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

CENTRAL LONDON THROAT. NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3 P.M., Demonstration of Cases:—Dr. Abercrombie: Pharynx and Naso-Pharynx.

FRIDAY.—3 P.M., Lecture:—Mr. Stuart-Low: Pharynx and Naso-Pharynx.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. W. K. Sibley: Electrical Treatments—X Rays, Radium, High Froquency.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Eczema in all its Stages.

CHADWICK PUBLIC LECTURES, Bedford College, Regent's Park, N.W.

SATURDAY.—3.0 P.M., Dr. A. T. Nankivell: Camp, Ship, and Hospital Hygiene—I., Our Soldiers' Health in Peace and War (illustrated with lantern slides).

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

THURSDAY.—ANCOATS HOSPITAL, Mill-street.—4.30 P.M., Medical and Surgical Cases.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 4th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 29	29·440	N.E.	0·20	75	53	42	45	45	Fine
,, 30	29·454	N.E.	0·03	77	55	45	47	48	Cloudy
,, 31	29·352	S.E.	...	85	54	48	50	52	Overcast
Nov. 1	29·390	S.E.	0·01	86	57	48	47	49	Cloudy
,, 2	29·440	S.E.	0·29	63	57	48	50	51	Cloudy
,, 3	29·620	S.W.	0·20	92	59	51	51	51	Raining
,, 4	29·772	N.E.	...	70	56	48	49	49	Foggy

The following magazines, journals, &c., have been received:—Canadian Medical Association Journal, Canadian Practitioner, Ophthalmoscope, American Journal of Orthopedic Surgery, Indian Medical Journal, St. Thomas's Hospital Gazette, American Journal of Tropical Diseases, Dominion Medical Monthly, Practitioner, British Dental Journal, British Review, Duodecim, South African Medical Record.

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T.—Dr. A. H. Thompson, Lond.; Dr. J. M. Twentyman, Lond.; Dr. L. Thorne Thorne, Lond.; Dr. G. H. Taylor, Sydney; Dr. Nestor Tirard, Lond.; Dr. James Taylor, Lond.

W.—Messrs. Winter, Birmingham; Western Dispensary, Lond., Secretary of; West London Medico-Chirurgical Society, Hon. Secretaries of; Dr. Wyatt Wingrave, Lond.; Dr. R. Stenhouse Williams, Reading; Dr. J. Whitridge Williams, Baltimore; War Refugees Dispensary, Lond., Secretary of; Women's Hospital for Children, Lond., Secretary of; Messrs. Willing and Co., Lond.; Dr. P. d'Erf Wheeler, Worthing; Messrs. J. Woodhead and Sons, Huddersfield; West London Hospital Post-Graduate College, Dean of; Professor Wm. Wright, Lond.; Messrs. James Willing, Lond.; Wellcome Chemical Research Laboratories, Lond., Secretary of; Dr. A. E. Woodall, Lond.; Messrs. J. Williams and Son, Bradford; Worcester County and City Asylum, Powick, Clerk to the.

Letters, each with enclosure, are also acknowledged from—

A.—Ashton-under-Lyne District Infirmary, Secretary of; A. L. A.; Messrs. Arnold and Sons, Lond.; A. B. C., Aylesbury.

B.—Messrs. Boots, Nottingham; Dr. W. Bain, Harrogate; Birkenhead Guardians, Clerk to the; British Oxygen Co., Lond.; Beckett Hospital, Barnsley, Hon. Secretary of; Surgeon-General G. Bainbridge, Parkstone; Dr. B. Barnett, Ely; Messrs. E. J. Burrow and Co., Cheltenham; Surgeon T. S. Bradburn, R.N.; Captain E. G. Blair, Edinburgh; Mr. C. Brooks, Lond.; Messrs. H. Brown and Co., Liverpool; Dr. J. C. Bowie, Cardiff; Berkshire Education Committee, Reading, Secretary of; *Birmingham Daily Post*, Manager of: Dr. A. Breuer, Lond.; Bristol Royal Infirmary, Secretary of; Mr. H. Butterfield, Northampton; Dr. A. Bevan, Lond.

C.—Cumberland Infirmary, Carlisle, Secretary of; Cheltenham General Hospital, Secretary of; Corbett Estate Office, Droitwich; Messrs. T. Christy and Co., Lond.; Messrs. Constable and Co., Lond.; Cheshire County Council, Chester. Accountant to the.

D.—Derbyshire Education Committee, Derby, Accountant to the; Dr. J. F. Dover, Cardiff; Durham County Council, Clerk to the; Messrs. Durant, Radford, and Co., Lond.; Messrs. A. Driver and Sons, Chelmsford.

E.—Exeter Corporation, Clerk to the; E. M. F.

F.—Mr. S. A. Folland, Hatherleigh; Sir K. Franks, Johannesburg.

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N.—Norwich City Education Committee, Clerk to the; Norwich Corporation, Accountant to the.

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S.—St. Andrew's Hospital, Northampton, Clerk to the; Miss Syme, Lond.; Lieutenant-Colonel W. A. Simmonds, Fowey; Dr. A. V. Stocks, Hale; St. John Ambulance Association, Lond., Secretary of; Mr. H. Smith, Bury St. Edmunds; Messrs. Squire and Co., Lond.; Scientific Press, Lond., Secretary of; Mr. W. B. Saw, Lond.

V.—Messrs. Van Houten, Lond.

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Y.—Dr. F. C. Yorke, Edgeworthstown; York County Hospital, Secretary of.

The Bradshaw Lecture

ON

SOME CLINICAL CONTRIBUTIONS TO THE STUDY OF GLYCOSURIA.

Delivered before the Royal College of Physicians of London on Nov. 3rd, 1914,

By NESTOR TIRARD, M.D. Lond.,
F.R.C.P. Lond.,
PROFESSOR OF MEDICINE, KING'S COLLEGE; SENIOR PHYSICIAN, KING'S COLLEGE HOSPITAL, ETC.

Mr. President and Gentlemen,—The Bradshaw lecture, under the terms of its foundation, may be on some subject connected with either medicine or surgery. For many years past the study of glycosuria and diabetes has been vigorously pursued by experimental methods, yet I venture to hope that clinical observations of these conditions may still have practical bearing upon our conceptions of the etiology, the prognosis, and the treatment. Although glycosuria and diabetes ordinarily belong to the province of the physician rather than to that of the surgeon, there are many occasions upon which these two branches of the profession must act conjointly. From clinical observations I hope not only to throw out some light for the guidance of surgeons in some of the difficulties which arise, but also to show that my subject to-day combines both elements of the terms of the foundation of the Bradshaw lecture.

The Nature of Glycosuria.

While all results of experiment are entitled to careful consideration, many clinicians feel that we are perhaps devoting too much attention to the results of one phase of laboratory work, while scarcely sufficient stress is being placed upon another—viz., the definite result of careful chemical and clinical research. I have long been of opinion that in glycosuria and diabetes we are dealing with defective vital processes which may have no constant underlying pathological change. In other words, I have been tempted rather to look for numerous causes of perversion of physiological processes, instead of attempting to fix upon any single factor for glycosuria.

A study of the history of the contributions to our knowledge of this condition would, I believe, warrant the following propositions:—

1. From the clinical side it might be assumed that glycosuria is encountered under too many varying conditions for it to be due to one constant pathological change.

2. In spite of laborious research no one pathological change has hitherto been demonstrated. As Dr. Saundby has remarked, "The most important common lesion is the wasting of the pancreas," but he does not mean "common to all," since he has enumerated many cases in which the pancreas was either normal or enlarged, instead of being atrophic. Indeed, out of 27 cases he examined, only 13 showed atrophic changes of the pancreas; in the others the pancreas was enlarged, congested, or normal.

3. Glycosuria must be regarded as a perversion of a natural physiological process, and the importance of the condition depends upon the extent and duration of this perverted process. It would appear legitimate to compare the change with the perverted growth of natural cells, which is considered to be the underlying factor of cancerous growths.

4. When endeavouring to trace the cause of a perversion of a natural process we must not expect to be able to demonstrate gross lesions on the post-mortem table. Lesions may certainly be found if the perversion has been long continued, but, since the process is vital, changes must be sought in the method of working rather than in the structure. In cases of long duration the structure of various organs is necessarily altered as a result of the disease, as Dr. Saundby has remarked, but in all probability the negative results of post-mortem investigations may be due to the rapidity of the termination, which often leaves all parts wasted, without incriminating any special organ. The general machinery shows the result of lack of coördination of work, but the cause for the lack of harmony can only be found while the machinery is in action. Similarly, we cannot expect to derive certainty of information from physiological experiments in which the conditions are so far removed from those of human life. Post-mortem observations and physiological experiments are indeed of great value in suggesting lines of possible explanation, but I believe we are likely to get nearer the truth by a careful consideration of the data supplied by pathological chemistry. These data, in turn, must be checked by clinical deductions.

Graphic Records.

I should like now to direct your attention to various observations which have been carried on under my direction for many years past. The first step of an independent nature arose from my dissatisfaction with the ordinary mode of collecting and tabulating the results of analysis of the urine. It has long been customary (and it is indeed the only method) to receive reports upon small samples of the urine, and these reports appear in terms of the relative proportion of sugar in the particular specimen examined. This report is made in the form of so many grains of sugar to the ounce of urine, or of so much per cent., and the value to be attached to these figures must be calculated from a knowledge of the amout of urine passed in the 24 hours. This is, of course, a perfectly simple matter to estimate, if careful records are kept of the quantity passed. We have merely to multiply to get the amount of sugar eliminated on any particular day. The result, however, is that we obtain a chart indicating in a series of columns the quantity of liquid taken, the quantity of urine passed, the amount of sugar in grains per ounce, and the calculated number of grains of sugar passed in the 24 hours. Although such a chart is of considerable value, it is a little difficult to estimate the course of the case when dealing merely with columns of figures, and there is no doubt that daily variations would be more easily appreciated if they could be represented graphically.

The first step, then, that was taken was the preparation of a chart like a temperature chart, which should show daily the total quantity of sugar as estimated from the examination of the mixed specimen of known volume. In following the curve it was easy to see at a glance what daily variations resulted from different modes of treatment or of diet. Charts prepared in this way merely served at first to confirm much of our previous knowledge of the various types of glycosuria and diabetes. They graphically indicated the important distinctions between diabetes occurring early or late in life, and they further showed how often the glycosuria of the aged could be regarded as a trivial matter, readily controlled by due modifications of diet. There is no novelty in this, but the graphic chart certainly made the observations more obvious.

Having realised the utility of this chart, the next step was to indicate alterations in the weight of the patient, and by assigning a different value to the divisions of the chart it was possible to represent these changes in graphic form. For a length of time the charts we employed remained in this simple form, but in view of Graham Lusk's observations upon the dextrose: nitrogen ratio (D : N) we hoped that information of some value might be derived from similarly recording upon the same chart the daily estimation of the quantity of urea passed.

Before saying more about these charts I would venture to indicate how the personal factor has been carefully eliminated, since the observations on any particular day have been made by different individuals. Thus as part of the ordinary routine of work the staff nurse has recorded daily the amount of urine passed in 24 hours, and also the specific gravity of a mixed sample. This mixed sample has been daily examined in the pathological department, which has supplied a report showing the number of grains of glucose per ounce. From these data the daily amount of sugar has been calculated and recorded on the urine chart, while a separate chart prepared by the sister in the ward noted these results. Similarly the daily estimation of the urea and the weekly weight of the patient have been recorded.

In using sectional charts it was soon found that it was convenient to assign different values to the big squares. For example, if the amount of sugar was small it was better to assign a high value to each square, so as to keep the separate curves well apart from one another. We have usually kept to the same value for the urea and for the weight, but we have sometimes let each square represent either 100 or 200 grains of sugar. Therefore in considering any single chart it is important to remember the key which indicates the value of the square on that chart.

I lay some stress upon the number of hands through which these records passed. Those who tested and those who did the calculations before the records were entered had no knowledge of the changes that might have been made in the wards, either in diet or in treatment. I would also add that when we came to realise the value of these charts we endeavoured to avoid erroneous inferences by not making changes in the diet and in the treatment upon the same day.

In every case of glycosuria or diabetes it is common knowledge that patients may be restive and may surreptitiously obtain unauthorised starches and sugars. In keeping these records in hospital it is generally easy to trace any such departure from rules. Occasionally we are sufficiently fortunate to deal for long periods with absolutely trustworthy coöperation on the part of the patient, as well as on the part of all who have to make the records. In these comparatively rare cases a record that has been kept over a period of many months becomes of considerable value, and it is from such records that I have ventured to draw certain conclusions which I propose putting before the College to-day.

Before entering upon these conclusions it may be well to state that I do not propose to weary you with lengthy details of individual cases or with a formidable array of figures which might easily be drawn from my charts.

RELATIVE INFLUENCE OF DIET AND OF DRUGS.

Naturally one of the first features to claim attention was a comparison between the influence of diet and of various drugs upon the amount of glycosuria. This comparison is easy to make when the condition of patients on admission to the hospital permits two or three days to be devoted to a record of the daily output of sugar while on ordinary diet, and when they are sufficiently well also to permit a further short period to be spent in recording the changes which result from the gradual elimination of materials which would contribute to the formation of glucose. Under these circumstances we have found, in common with other observers, that an enormous reduction in sugar results during the first few days of the limited diet. In gouty, obese individuals of advanced age the sugar may entirely disappear under the influence of diet alone; this is especially noteworthy when the urine has been of comparatively low specific gravity and when there have been no urgent symptoms. In other cases we soon reach a stage beyond which it appears that no further benefit is to be expected from the ordinary hospital or hygienic surroundings, care, and limitation of starchy and saccharine material. In some cases, where patients previous to admission to the hospital have been treated as out-patients and dieting in their own homes, it has been necessary to combine dietetic and medicinal treatment immediately, and in these it has been difficult to determine to which form of treatment the rapid diminution of sugar was to be attributed.

On some occasions medicinal treatment has preceded any dietetic change, and the conclusions formed have been that such treatment without alteration of diet is of comparatively little value. Some reduction in the daily output of sugar has ensued during the first few days, but it has been difficult to avoid suspecting that this diminution might be the result of hospital management rather than of the remedies employed.

I do not propose to take up time by speaking of the relative value of different special or proprietary forms of diabetic food. I have used many varieties and have formed the opinion that to a large extent the taste of the individual has frequently to be consulted in the selection or the continued use of any particular variety of diabetic food or bread substitute. I have found repeatedly that after one form of food has been taken for a time and changed to another, the impetus of novelty will at first encourage the patient, even though there may be no important change to be recorded on the chart. On the other hand, where there has been marked distaste for the new form of food there has usually been an increase in the daily percentage of sugar, which has rendered it advisable to revert to the form originally well tolerated.

RELATIVE INFLUENCE OF VARIOUS DRUGS.

Directly we introduced the system of keeping records in graphic form, it was realised that the method was likely to be valuable in enabling us to trace the influence of drugs upon the amount of glycosuria. In these investigations it was obviously important to avoid being misled, either by the sensations or statements of the patient or by making changes of more than one factor at a time. For example, if possible we never changed the diet and the treatment simultaneously. Further, when a change of remedy was made we endeavoured to give the new remedy in a similar form to the one previously used—we might substitute one pill for another of different composition, or one mixture for another, but we did our best not to confuse the issue either by making too many changes at once or by placing reliance upon statements of improved sensations, which conceivably might be due to the sanguine expectations of a new mode of treatment. We sought cold impartial accuracy of result rather than the enthusiastic welcome of some new thing.

In the selection of the remedies employed we have been guided sometimes by theoretical considerations, sometimes by statements of the experience of other clinicians. Some of the remedies have been clearly used or recommended on an idea derived from physiological experiments, and therefore have some relation to the prevalent theory of glycosuria. Some have direct reference to the pancreatic theory, others appear to have connexion with digestive or other ferments, while of some the explanation is so elusive that they come under the banned (but useful) heading of empirical remedies. My desire has been to form an impartial opinion upon the value of the remedy in the individual case, and the conclusions must be taken merely as indicating that in that particular case certain remedies have or have not given satisfaction.

I do not propose to enumerate all the remedies that have been tried in my wards within the last few years, but to select for special mention only those where my charts indicate divergence from the observations of others, or where I have had reason to believe that benefit was directly due to the drugs. I have not found any remedy that can be considered universally applicable.

Codeine.

Codeine has been used in many cases, but in my hands the benefits, so far as sugar is concerned, have not been very obvious or constant. I do not deny that the records may sometimes have shown a certain reduction of the daily output of sugar during the time that codeine, or other derivative of opium, has been employed, and, while freely admitting that some patients appeared less troubled by thirst while taking codeine, and some were certainly less nervous and worried, I have occasionally feared that these drugs might be harmful. When the dose was increased from a third of a grain to half a grain I sometimes observed disquieting apathy and drowsiness, which led to a discontinuance of the drug. These symptoms may have been the direct result of the hypnotic influence of the codeine, or they may have been due to an arrest of the elimination of glucose, but in either case they were disquieting, as they resembled the usual forerunners of diabetic coma.

Sodium Salicylate and Sodium Bicarbonate.

My charts show that the use of sodium salicylate or of acetylsalicylic acid has given far more general satisfaction both in comparatively mild and in severe cases. When employing sodium salicylate in a case in which the glucose had been gradually reduced by dietary restrictions, we found that during the administration of the drug the glucose ultimately disappeared, and the benefit persisted even when a moderate amount of carbohydrate was allowed. For a short time any attempt to reduce the amount of salicylate while bread was being given was followed by a reappearance of glucose in the urine, but eventually it was found possible to allow two ounces of bread daily, even when the salicylate had been finally discontinued.

In collating my material I have found that I have made free use of large doses of sodium bicarbonate. This has in some cases been employed comparatively early, and it has been used to attempt to reduce the high degree of acidity which is so often present, even without any suspicion of acidosis. In my experience of hospital patients it has been extremely difficult to reduce this persistent acidity. Rarely, after very large doses, the urine has been rendered alkaline for a short time, but it has always speedily returned to a neutral or acid condition, in spite of the use of the bicarbonate.

I venture to lay some stress upon this observation, since most observers advise that, with the onset of toxic symptoms, indicated by drowsiness, severe headache, or coma, or by changes in chemical reaction showing the presence of acetone or diacetic acid, the urine should be rendered alkaline as quickly as possible. This is quite good advice, but it is not easy to obtain an alkaline reaction quickly, and it is still more difficult to maintain an alkaline or neutral condition of the urine for any length of time.

Guided by earlier experience I find that more recently I have frequently commenced medicinal treatment with a mixture of sodium salicylate and sodium bicarbonate, the quantity of bicarbonate being from twice to three times the amount of salicylate. The amount has been largely determined by the degree of acidity of the urine, or by the presence of drowsiness or other toxic symptoms.

Other Drugs.

When it has appeared that a stationary stage had been reached beyond which no further benefit seemed to result from modifications of dosage, while still continuing these remedies, I have given occasionally other drugs in turn, and have carefully noted the results. In one such case, which was under observation for many months, we were able to watch in turn the influence of codeine, takadiastase, and of trypsogen.

I have already referred to my general experience with codeine in connexion with other patients. In this particular case my chart showed that it exerted no material influence upon the output of glucose, while on the other hand the patient so often became dull and lethargic that it was deemed advisable to stop the administration.

In this case, and in others, I was similarly unable to confirm the favourable observations of others with regard to takadiastase. The reports made by Dr. E. J. G. Beardsley, of the Jefferson Medical College Hospital, were so striking that they merited investigation. He stated that takadiastase had a tendency to alleviate all the symptoms in diabetes. He said it decreased the amount of sugar for a time, but this finding was not constant. He asserted that, even while the sugar increased during the administration of the drug, the symptoms were relieved. He admitted, however, that the patients seemed more depressed for a few days following the first administration of the drug. From my observations I am inclined to agree with Dr. Beardsley so far as concerns the depression, but in my hands takadiastase has been connected with an increase of glucose, with no amelioration of other symptoms. I must admit that I have employed takadiastase in a relatively small number of cases, and therefore only say that in these particular patients the increase of glycosuria and the absence of any tangible improvement did not warrant a continuance of the treatment, and did not appear to justify further trial upon other patients.

With regard to trypsogen, my experience has been limited to its use on two patients. On the first occasion that it was employed the amount of sugar went up when three tablets were given three times a day. The use of trypsogen was continued for 19 days, when it was thought wise to leave it off as the amount of sugar still remained high. When it was discontinued the sugar went down to the merest trace, and later, the amount of sugar having again risen, trypsogen was given three times a day, with the result that the sugar rose with a huge bound, and after eight days it was again discontinued. I may add that on each occasion the patient objected strongly to the use of the drug.

It having been stated that calcium iodide very rapidly reduced the output of sugar in many cases, where neither dieting, nor the use of codeine had had much effect, I determined to test the value of this remedy in suitable cases. It was given twice daily in 5-grain doses to one patient for nine days. Before the administration he was passing 1520 grains of glucose in 24 hours, on the fourth day he passed 2000 grains, and the amount increased to 2440 grains on the ninth day, when it was thought advisable to discontinue. In a second case the same dose was given three times a day. At the commencement 1600 grains were being passed. After a week of treatment it was found that the sugar had increased to 2120 grains. In a third case 10 grains of calcium iodide were given three times a day. This was continued for 32 days, during which time curious oscillations of the sugar curve were observed. Starting from 1920 grains it fell in four days to 1480 grains. Then it rose with an oscillating line until it had reached a level of 2560 grains in another eight days. Then in five days it fell rapidly to 840 grains, after which, with fairly wide oscillations, it steadied at an average of 1600 grains. This experience of calcium iodide is confined to three cases, but since it entailed daily estimations over a period of seven weeks it is perhaps sufficient to cast some doubt upon the value of calcium iodide, and may serve to save others from similar disappointments.

Laxatives.

The importance of checking the tendency to constipation, which so often ensues with the restricted diet or results from the use of one of the derivatives of opium, has led to the frequent employment of laxatives. In glycosuria I have found that greater benefits follow from magnesium sulphate or sodium phosphate than from the vegetable purgatives. The salines in moderate doses have been given so frequently that it has been difficult to estimate any particular influence upon the output of sugar, although they certainly tend to a reduction of the acidity of the urine, to which reference has already been made.

Within the last few years additional interest has been directed to the use of massive doses of salines for the relief of urgent symptoms, and several cases have been recorded in which large doses of Hunyadi Janos water have checked symptoms of acidosis, and have been followed by a disappearance of acetone and diacetic acid. In the cases in which I have given Hunyadi Janos in this way I have noted two interesting facts. The first is that the degree of purgation is not proportionate to the dose employed; very large doses of the water seeming to be followed by no greater purgative action than might have been anticipated from a moderate or ordinary dose. The second fact concerns the output of sugar; in my cases I have found that there is a rapid fall in the 24 hours' quantity, and that, although on subsequent days the amount speedily rises, the level attained remains for many days far below the average observed before the use of this special treatment.

My experience, therefore, may be briefly summed up by saying that I have learnt to place reliance upon the use of some preparation of salicylic acid in conjunction with the frequent use of moderate doses of saline purgatives, or with the occasional employment of large doses of salines for two or three days in succession.

RELATION BETWEEN LOSS OF SUGAR AND WEIGHT.

With regard to the information the charts afford as to the relation of the loss of sugar and the weight of the patient, we have not found it necessary to make daily records of weight, since it is well known that slight oscillations of daily records of weight are of comparatively small importance. The weight has been taken at the same time of day once a week, and, in the majority of instances, the weight has been found to improve steadily with the reduction of the daily loss of sugar. We originally drew these two figures into comparison, so as to have some more definite indication of progress than the mere statement of the patient. It is obvious that the sense of well-being, although it may be expressed with perfect sincerity, is of small value as compared with a definite increase in the body weight.

This increase has been one of the most comforting features of many of my records, since it is an increase in spite of the elimination of many of the fat-forming articles of diet, and in spite of the reasonable amount of exercise which is permitted to these patients. The increase in weight, therefore, is not comparable to the increase in weight of tuberculous patients who are being kept recumbent and who are being fed largely with fat-forming materials.

The increase in weight is occasionally very remarkable. One of my most noteworthy examples is afforded by a man who had been treated originally in the surgical wards for a tuberculous testicle. When he first came under my care his weight was only 6 st. 7 lb. It rose almost continuously until, when he left the hospital, it had reached 10 st. This patient was again admitted to hospital towards the end of last November, his weight then being just 8 st. During the time that he remained with us, a little over two months, his weight again rose to 10 st.

I have learnt from continuous observation of these charts to attach relatively little importance to small oscillations in the amount of sugar, so long as the line marking the weight shows a steady rise. The converse, unhappily, holds good. When the amount of sugar has been gradually reduced, either by diet or by drugs, if there is a rapid loss of weight, the case cannot be regarded as satisfactory, and I have felt justified in administering articles of diet which would increase the amount of sugar provided that they also caused an increase in the weight. In many chronic cases my charts confirm the common experience that it is wise to permit some carbohydrates to maintain the weight and well-being of the patient.

In this connexion I would mention that these observations have relation only to the question of the weight and the sugar. They are not influenced by any other considerations, such as an increase in the reactions for acetone or diacetic acid, or by any symptoms of acetonæmia.

RELATION BETWEEN LOSS OF SUGAR AND UREA.

Having a chart on which it was possible to represent the daily amount of urea in addition to the other factors, and having many willing workers ready to assist with the daily estimations and calculations required, we have in recent years recorded the daily output of urea in all our cases of glycosuria. It was hoped that in this way we might be able to confirm from a clinical side the statement of Graham Lusk on the dextrose: nitrogen ratio, which in phloridzin diabetes, after all carbohydrates in the body, such as glycogen, have been got rid of, was placed by him as a constant ratio—viz., 3·65 : 1. It has been found convenient to express urea in terms of percentage rather than to attempt to calculate the actual amount of urea passed daily. To some extent, therefore, during the earlier phases of each of the charts it is not fair to attempt to compare the percentage, which takes no note of the quantity of liquid passed, with the figure for glucose, which is an actual amount calculated in relation to the quantity of urine eliminated. During the later stages—that is, after the case has been under observation for a fortnight—the daily amount of urine passed usually varies within a very small range, and it now becomes possible to obtain an idea of the relation which may exist between the dextrose and the nitrogenous output.

I am aware that the estimation of urea will not include all the nitrogen to be found in the urine. There are numerous other compounds of nitrogen which should, perhaps, be taken into account before attempting to draw conclusions. Urea, however, represents such a large proportion of the daily nitrogenous loss that it may be assumed that the dextrose: nitrogen ratio above mentioned should be maintained even as regards urea; in other words, it might be expected, from experimental data, that when we are dealing with a large number of daily records we should find some relation between the output of glucose and that of urea. We might anticipate that an oscillation of the dextrose line should be accompanied by a proportionate oscillation in the same direction of the urea record.

Upon this point I must confess that our expectations have not received any support. Viewed alone the urea curve has certainly shown many variations from day to day; usually these are within a very moderate range, but occasionally there is a sudden considerable rise or fall of the urea curve. We have found that this appears to have no relation to the dextrose line, which in its turn may betray similar instability without any change in the general trend of the urea curve. At present no explanation is forthcoming for these oscillations in the urea curve.

I can only state that prolonged observations have shaken my faith in the clinical value of a comparison of the dextrose urea curves. Changes in the amount of urea, so far as my experience extends, do not appear to have any clinical or practical bearing upon the course of the glycosuria or diabetes. They are probably the result of some change in the diet or of some difference in the amount of exercise, but they do not occur with sufficient regularity to throw any light upon the prognosis, and, on the other hand, they are too frequent for it to be assumed that they are due to experimental error.

THE CHARTS AND PROGNOSIS.

The amount of patient labour entailed in the construction of the graphic records of cases of glycosuria and diabetes led me to attempt to derive the utmost information from them. Naturally in every case the prognosis is an early question, and in this it was hoped the charts might help materially. Hitherto the prognosis has been guided by numerous well-known factors—for example, the age of the patient, the specific gravity of the urine, the degree of emaciation, the occurrence of toxic symptoms like drowsiness, or that curious feature of air hunger, or the development of grave complications like carbuncles, boils, or gangrene, which so often have been regarded as leading on to a fatal termination.

Our charts helped in forming a prognosis in various ways. They showed the relative influence of dietetic and medicinal treatment, and left no doubt about the greater importance of diet.

They enabled us to test the amount of improvement resulting from various drugs, and helped us to draw conclusions which, however, had to be guarded, conclusions limited to the statement that in the particular case certain drugs had or had not given encouragement for further guidance. Our graphic records led us to speak with reserve on the prognostic value of a daily estimation of urea, and with still greater hesitation on an attempted comparison of the output of urea and of sugar. Most important information, however, was derived from the comparison of the curves showing the relation between the loss of sugar and the gain of weight. In true diabetes we learnt that a steady increase of weight, in spite of a moderate amount of sugar, had to be regarded as a favourable element in the prognosis. In the absence of toxic symptoms, anxiety was only felt when there was a rapid decrease of weight, in spite of measures taken to limit the loss of sugar. No anxiety was felt when in elderly obese individuals there was a steady loss of weight together with a rapid diminution of sugar.

We had, indeed, gone far towards feeling that our records would contribute largely to the available information for framing a prognosis, and then came a check which for the time seemed likely to upset all our confidence.

Cases with Suppuration or Gangrene.

Soon after the graphic charts were in use several patients were transferred from the surgical to the medical wards on account of glycosuria. Some began with symptoms which led us at first to fear we were dealing with advanced diabetes. The thirst, the amount of urine, the high specific gravity, and the rapid emaciation appeared to warrant a serious diagnosis. Then after an interval of treatment the symptoms improved and the serious aspect disappeared, and we had to revise our early diagnosis.

These cases all had either some form of suppuration or some form of gangrene, and the patients were sent to the medical side owing to the fear of performing operations of any magnitude while sugar was present in large quantity. Generally the gangrenous part was dressed with boric acid, or in cases of suppuration incisions were made to afford free escape of pus. I repeat that most of these patients on admission presented every indication of severe diabetes, and yet the sequel showed that this diagnosis was not correct. The improvement of the glycosuria was too rapid and, I may add, too unexpected to be attributed either to the modified diet or to the remedies employed. The symptoms had been too grave to warrant an assumption of a dietetic glycosuria, and some other explanation had to be sought. The current theory that "with the onset of severe complications the tolerance of the carbohydrates is much increased" seemed to offer a suggestion, but it was difficult to believe that severe complications like boils, carbuncles, perforating ulcers, or gangrene could lead to a tolerance of carbohydrates which should produce not only a disappearance of sugar, but also a rapid amelioration of all symptoms commonly associated with serious glycosuria.

Since our graphic records demonstrated facts which were so unexpected, it was necessary to look more closely into the clinical features of these cases and to attempt to discover some common factor. I have selected the following brief notes to show the nature of my experience of some cases of perforating ulcer or of gangrene with glycosuria.

A woman, aged 50, was admitted complaining of bad feet and great thirst. The increased thirst had first been noticed three years before, but had passed off until a fortnight before admission. During the last two years there had been gradual loss of weight. She stated that one year ago a nail had run into her foot and caused a wound, which first healed up and later broke down again. There was a sinus near the ball of the great toe which was enlarged and dressed; later the first metatarso-phalangeal joint was excised. On admission the urine had a specific gravity of 1030, and contained much sugar (28 grains to the ounce). Under dietetic treatment the amount of sugar speedily diminished, and after the operation sugar disappeared entirely.

A second case was somewhat similar, but there was no history of injury. This patient was also a woman, aged 43. She stated that some years earlier she had had an ulcer on the right foot, which, although under treatment, had taken three years to heal. Trouble in the left foot began with an ulcer in the sole ten months before admission, and within two months three other ulcers appeared. During this time there was rapid loss of weight (from 16 st. to 10½ st.), great thirst, frequency of micturition, and marked constipation. The four ulcers were connected by deep sinuses, and there was much offensive discharge. Under stovaine the openings were enlarged, and boric fomentations were used. The healing process was slow, four months elapsing before the ulcers closed. On admission the urine contained 21 grains of sugar to the ounce. During treatment sugar was speedily reduced and was often entirely absent.

A third case showed perforating ulcer, followed by gangrene, in a man over 60 with chronic interstitial nephritis and glycosuria. There was a history of chronic alcoholic excess, and the condition was so bad that the prognosis appeared desperate. Treatment with boric fomentations, and the removal of necrosed tissues were followed by rapid improvement and a reduction of the sugar. A year later I heard that the foot had healed, and that sugar was no longer to be detected.

A still more striking example was afforded by a patient whom I saw in consultation with a surgeon about three years ago. The patient was a man, aged 53, suffering from gangrenous phimosis, and the surgeon was averse to operation owing to the presence of sugar in the urine. The history showed that during two years there had been increasing frequency of micturition and some loss of weight. Four days before the patient saw me he had been markedly drowsy and had complained of parched mouth and dry tongue. Although the specific gravity when first examined was 1040, it speedily fell after the removal of large gangrenous sloughs, and within a month it was extremely difficult to obtain any reaction for sugar. The sugar ultimately disappeared until the patient had an attack of tonsillitis, when during the high temperature sugar was again found to be present for a short time.

Relation of Glycosuria to Gangrene.

These cases led me to go through my earlier records of other forms of gangrenous conditions, and to study again the literature of this subject. I found that my own notes showed that in gangrene, and in perforating ulcer of the foot, associated with glycosuria, there has invariably been a marked diminution of sugar during the treatment of the local condition. As the improvement was more rapid and more complete than that resulting from dietetic or medicinal treatment, it seemed possible that the common factor we were seeking might be found in the removal of some hitherto unsuspected cause for the appearance of glucose. Again, it has been noted by others that with a return of gangrene there has been a fresh glycosuria. In one such case the glycosuria and gangrene have returned on three separate occasions.

During the last few years there has been an increasing distrust of the accuracy of the term *diabetic gangrene.* Many observers, surgeons, have maintained that the gangrenous change results from arterio-sclerosis with thrombosis, rather than from a primary local infection favoured by the presence of sugar in the circulation, as was formerly supposed. This view would suggest that we are really in such cases dealing with senile gangrene occurring in patients who are unfortunately suffering from diabetes, which of necessity presents a grave additional risk. While it must be admitted that in such cases the process of healing is extremely slow, I believe this may be due to defective circulation, the essential cause of the gangrene, and not to alterations in the composition of the blood associated with glycosuria. I think this view should encourage greater readiness to remove gangrenous tissues at an early stage. Operations of greater magnitude might well be reserved until the quick reduction of sugar has permitted greater liberality of diet.

Hitherto there has been, so far as I can trace, no suggestion that the glycosuria may possibly be a feature which has arisen subsequently to or concurrently with the gangrenous process. When once this idea presented itself I again went through my notes and was surprised to find how frequently patients had made mention of some suppurative process shortly before the onset of the symptoms which are definitely referable to a pronounced glycosuria. One dated his illness from an abscess in the jaw, several had mentioned dental troubles, and repeatedly came the statement of serious pyorrhœa, a statement made by clinical clerks, when there had been no thought of the possible future value of the recorded fact.

CONCLUSIONS.

We have learnt the value of early relief of pent-up pus, of early removal of gangrenous tissues, and of the adoption of measures to prevent septic absorption. Can we not go a step further and add yet another theory for glycosuria which may knit together in a new light the results of clinical observation, of physiological experiments, and of pathological investigations?

While greater influence on glycosuria is exerted by diet rather than by drugs, the remedies which have proved most efficacious, the salicylates, are those which we ordinarily credit with the power of controlling toxic processes resulting from the growth of micro-organisms. From the experimental side glycosuria has been induced in dogs by injecting into the pancreas irritants which have produced pancreatitis or extensive sloughs. By the removal of sloughing tissues, as in carbuncles, in perforating ulcers, and in gangrene, we find clinically that glycosuria is quickly reduced. Do not these observations, collectively, warrant the suggestion that some cases of glycosuria depend upon a perversion of pancreatic secretion due to toxic absorption? If this view is correct, may it not also lead to the employment of a vaccine to counteract the toxic influence?

To return to my graphic records, if they contribute to a more sanguine view of the value of early treatment, and if they lead to a new suggestion for future workers, all concerned in the labour will be amply repaid for the trouble involved in lengthy observations carried out with no preconceived idea of the results which might be attained. My graphic records are the result of patient and cordial coöperation of the pathological department at King's College Hospital, and of many ward sisters, nurses, house physicians, and clinical clerks. To them I once more tender grateful thanks for loyal service, and to you, Sir, I venture to express my gratitude for this opportunity of giving publicity to their work.

SOME OF THE PROBLEMS OF GUNSHOT FRACTURES.

By ERNEST W. HEY GROVES, M.S. LOND., F.R.C.S. ENG.,

CAPTAIN, R.A.M.C. (T.F.); SURGEON TO THE BRISTOL GENERAL HOSPITAL AND LECTURER ON SURGERY IN THE UNIVERSITY OF BRISTOL.

Frequency.—It is difficult to over-estimate the importance of the timely solution of the many problems connected with gunshot fractures. The severe injuries of other kinds—e.g., penetrating wounds of the head or abdomen—are mostly fatal, and it is probable that the cases of shattered long bones constitute the largest single group of serious non-fatal wounds. And not only do these cases survive, but their after-condition will depend very largely upon the way in which the injury was treated in the first place.

Pain.—Again, there seems almost no limit to the pain which may be caused by these bone injuries, both by mobility and by sepsis. The first, and perhaps from the humanitarian point of view most pressing, question is how to treat them at each stage so as to mitigate this suffering. The pain is not only so severe, but in the femur it is of such long duration that a man may have to suffer for several weeks daily agony when his wounds are dressed. The amount of pain will depend upon the degree of the injury, upon the occurrence of sepsis, and also upon the necessity for movement. The first two factors are largely out of our control, but the last is one which is insistent for solution. The limb must be immobilised for transport and also for the constant change of dressings. It is this latter point which is so difficult to carry out efficiently.

Sepsis.—The horrors of the worst types of sepsis associated with open bone fractures are familiar to all who are attending upon the wounded. The simple pyogenic sepsis, the gas gangrene and pyæmia are of frequent occurrence, and serve not only to make the injury more difficult to treat but render it a serious menace to life and limb. And after the first danger to life is over and the limb appears to be saved, the septic complications remain for weeks and months, requiring elaborate dressings and weakening the patient by the constant drain upon his strength. A further evil of septic infection lies in the loss of tissue, especially of the bones, which it causes. A septic process energetically treated may be cut short, with but little loss to the limb; but, allowed to spread, it may destroy a large part of the bone. The treatment of these septic limbs is difficult, requiring the utmost judgment and resource. Mere drainage by the insertion of rubber tubes appears to be quite inadequate. This device, which we have learned to rely upon in the sepsis of the serous cavities or in the treatment of a localised abscess, quite fails us in a septic limb. The septic process seems to spread so readily in the loose connective tissue planes between the muscles that the mere provision of an outlet does not check it. The limb must be widely opened up, foreign bodies, such as bullets, pieces of shell, loose bone fragments, and pieces of clothing, removed, and the large wound packed with gauze after swabbing with iodine. In some cases the provision of constant irrigation at an early period will probably cut short a spreading inflammation, but in all severe cases the tissues must be opened up freely.

The problem of life or limb?—We know that by adequate means we can often save a useful limb by conservative surgery which an older generation would have immediately sacrificed. But this conservation entails a grave responsibility. For in the attempt to save the limb we may lose the life. No rule can be laid down which will avoid this danger, but one general principle must guide us. It is that the combating of sepsis must be carried out in the most energetic way from the outset; the limb must be mutilated to be saved. Large bones and joints which are the seat of septic infection must be freely exposed and no attempt made to sew up the soft parts. This will lessen the danger to life for the moment; if successful, the limb will be less mutilated by incisions than by unchecked sepsis; and if, after all, the limb has to be sacrificed the ultimate amputation is less severe.

The function of the limb.—In the urgent problem of saving the vitality of a limb certain minor points relating to the preservation of its functions must not be lost sight of. These are the restoration of the bone to its natural length and line, the preservation of the nutrition of the muscles and the mobility of the joints. I call these minor points, inasmuch as their observation must in no way interfere with the prime necessity of combating sepsis, but later they are of major importance, because they determine how much use the limb will be after it has been saved. By the observation of three principles the condition of the limb may be secured very largely in all these respects. These three principles are those of constant extension, the semi-flexed position of the joints, and the use of apparatus which does not immobilise the joints above and below the broken bone.

The use of apparatus.—The use of all kinds of splints, slings, and apparatus requires the most careful consideration. A splint may be the greatest blessing or the greatest curse, according to whether it is properly adapted and intelligently used or otherwise. For military purposes the apparatus must be of the simplest and cheapest kind possible, so that it can be quickly made by local workmen. It must be capable of adaptation to the varying circumstances of the hospital, so that any bed can be fitted with it; and, above all, it must be adaptable to the needs of each case, so that the apparatus can be suited to the fracture and not the fracture to the apparatus. If possible, it ought not to require a long process for its application, neither ought it to need constant readjustment. I believe that the methods introduced by Florschütz, Borchgrevink, and von Saar, which were described in THE LANCET of Sept. 26th and Oct. 3rd and 10th, 1914, by Mr. J. H. Watson and Dr. T. Snowball, constitute by far the most efficient means at our disposal as yet described of carrying out these principles. Dr. von Saar was kind enough to lend me specimens of these splints, &c., for my recent Hunterian lecture,[1] and I have since put them into use and modified them to some extent. The descriptions and figures given in the article referred to will obviate the necessity of further details, and I will confine myself generally to points of principle and to an account of additions and modifications which I have used.

The rôle of extension.—No one doubts that for the treatment of fractures of an ordinary kind extension is the most important principle. But it must be borne in mind that in cases of gunshot wound with severe sepsis the treatment of the sepsis must take precedence over the restitution of the bone form. Now in extension the muscles are made taut, and close in round the bone, and the fragments of bone come to lie end to end. This hinders drainage. It is better, therefore, to recognise that there are three stages in the treatment of all these septic cases: (1) The cure of sepsis in which freedom of drainage and absence of tension are the most important factors; (2) the healing of the bone, which must be placed in good position by extension; and (3) the restoration of function to the joints and muscles by early movements. If this be accepted, then, it is wrong to adopt extension in the early stages of sepsis, or until free drainage has been assured. Not only must the wounds be enlarged, but in order to prevent the muscles falling together they ought to be incised transversely. This will secure a widely gaping wound and will lessen the overlapping of the bones. The time for extension to be begun in septic cases is when granulations appear. This indicates healing, and up to this time no bone repair occurs, and therefore it is a matter of no consequence whether the bone fragments overlap or not. Indeed, it is often the wisest thing to do to intentionally angulate the bone at the seat of fracture, so that its ends may lie superficially in the wound, and this position can easily be rectified when the tissues are clean and any dead bone has been thrown off.

Arm fractures.—Borchgrevinck's splints are excellent. That for the humerus consists in a Y and that for the forearm in an L-shaped piece of wood provided with a pulley at the distal ends; in both extension is provided for by a loop of rubber tubing. I have used instead of the latter the solid rubber doorspring which costs only 1*d.* and gives an extension up to 8 lb. But for elbow fractures it is better to use an internal angular splint with the corner cut out for drainage and a piece of wood which lies in front of the biceps as counter extension. For shattered forearms I have used a simple metal framework jointed on to an arm-piece. This allows movement at the elbow and also free rotation of the hand and free access to the wounds. In the shoulder fractures the great difficulty is stiffness in a position of adduction, and to overcome this the arm ought at an early period when the wounds have cleaned to be placed above the head; at first an anæsthetic is necessary for this and later the position of extreme abduction ought to be maintained for 12 hours each day when the patient is lying in bed.

Fractures of the femur.—These cases constitute some of the most difficult and the heaviest of all the serious wounds. They cannot be easily transported, they require elaborate dressing daily or twice a day, and they take weeks or months to heal. Florschütz used the method of suspension of the leg in a semiflexed position, with a weight extension, in the Balkan war, and the method is most excellent. The leg is slung to a bar running above the bed in its length by three slings and an adhesive plaster attachment holds the extending weight. This method, however, requires some time for its application, and as it depends upon continuous extension is liable to objection in the early stages of open fractures with severe sepsis. It is far better by reason of its simplicity than the Hodgen's splint, which is only good when perfectly adjusted and strongly extended. I am sure the Hodgen's splint is quite unsuitable for cases which require constant dressing. For the transport of cases of fractured femur nothing is better than the French wire cradle, which is both firm and light and effectually prevents rolling. The long Liston splint is a very poor protection against mobility and requires to be well applied, whereas the cradle splint holds the leg by its mere shape. The most generally useful splint for open thigh and leg fractures in their early stages is, I believe, an angled trough which supports the leg in a semi-flexed position. The thigh part must either be a separate structure or else readily taken off from the leg-piece, so as to allow for dressing and irrigation. The main principle is to support the leg by a trough under the calf at a height of about 8 inches from the bed. The thigh is then prevented from sagging by another splint or by a suitable pillow. Such a device can be made quickly by any carpenter, and when made its adjustment is done in a few moments. For dressing the thigh the upper splint or pillow is removed with the minimum of disturbance. When sepsis is lessened and the granulations appear a sling extension can be substituted.

The treatment of clean leg fractures with much shortening or comminution.—If the case is clean from the outset or when active sepsis is at an end, there may be great difficulty in restoring the length and shape of the bone. For a long time it has been demonstrated that by transfixing the lower bone fragment by a stout steel rod effective and correct traction can be made which will rectify the displacement. But this necessitates four to six weeks in bed. By transfixing the upper and the lower fragments a perfect restitution of the bone can be made under an anæsthetic by means of external extension screw bars, and the patient need not be kept in bed. Until recently I believed that this could only be used for the lower leg bones where both transfixion pins can be placed parallel to one another across the bone. But now I have completed a quite simple device which extends this principle to the femur or humerus, and in which the upper transfixion pins are antero-posterior, whilst the lower runs from side to side. In the femur this upper pin goes through the base of the great trochanter and the lower through the condyles. I will postpone a detailed description of this apparatus until I can give the results of its use.

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[1] THE LANCET, Feb. 14th (p. 435) and 21st (p. 513), 1914.

The wrong principles of treatment of septic open fractures.—As a last word, a warning may be uttered about errors of treatment which it might be thought would never be committed, but which nevertheless are of comparatively common occurrence. 1. To sew up a gunshot wound or laceration is wrong. Such treatment will often produce the most malignant type of sepsis or gangrene. 2. To attempt to suture or plate the bones is wrong. It necessitates wide incisions and endangers life, whilst it cannot achieve its purpose. The first principle for septic bone injuries must be to open up and not to close the wounds both of the soft parts and the bones. 3. To put up limbs in plaster is unjustifiable at an early stage, when the degree of sepsis is unknown. It causes pain, a retention of septic discharges, and endangers both life and limb. In exceptional cases plaster may be justified as a means of ensuring immobilisation during transport; but then the plaster should be light, with strengthening pieces of wooden lath or zinc. It should be put on in such a way that it can quickly be cut off—e.g., by leaving strings in front and behind for the introduction of wire saws or by placing a metal strip along and below the lines of the saw cuts between the dressing and the plaster—and most important of all, there should be a peremptory note written on the plaster case saying that it is to be removed within 24 hours of such and such a time.

Clifton, Bristol.

THE INCIDENCE OF PLAGUE IN EUROPE,

WITH SPECIAL REFERENCE TO THE RÔLE PLAYED BY THE RAT.

BY C. STRICKLAND, M.A., B.C. CANTAB.,
TRAVELLING MEDICAL ENTOMOLOGIST, FEDERATED MALAY STATES.
(*From the Malaria Bureau, Kuala Lumpur, F.M.S.*)

Madam Frances Pitt, writing in the *National Review*, says that plague has now no potential incidence in Europe, this not only being proved by the experience of the last centuries, but by the fact that the brown rat, which only carries a "large northern flea" incapable of feeding on man, has replaced the black rat, which, on the other hand, carries a flea an avid feeder on man.

Now in this paper it is hoped to prove also with Madam Pitt that plague has no further potential epidemic incidence in Europe, and for the same reason—to wit, that the brown rat has replaced the black. But before going any further I would venture to disagree with her induction concerning the flea. The large "northern" flea mentioned must surely be *Ceratophyllus fasciatus*, while the flea of the black rat meant is probably *Xenopsylla cheopis*, but it is a fallacy to suppose that the former bites not man—in fact, we here have found by experiment (1913) that it seems actually to be attracted to man rather than to the rat; and as for *cheopis*, which is responsible for plague in India, it is unusual to find it in northern climes—an only exceptional occurrence having been recorded from a place in London, where it was found breeding under some hot water pipes. The fleas of both species of rat in this country are identical, and if the brown rat by replacing the black has caused the disappearance of plague, it is not because the fleas which he carries are different.

We must look for other reasons to account for the disappearance of the plague. That it has been coincident with the change in the rat fauna, which is stated to have occurred in England, is certainly borne out by the experience of the last centuries, and we have as a control the fact that in seaboard towns such as Amsterdam, which still are infested by the black rat, plague does occur in outbreaks. This evidence so far certainly goes to prove that the rat factor is the cause of the change.

Now how should the brown rat make any difference to the incidence of plague if the black rat was responsible for it in former times? They are both rats, and have identical fleas. The whole answer to this question is bound up in our knowledge of the different habits of the two species. In the first place the black rat, as pointed out by the Indian Plague Commission, is a semi-domesticated species, it does not fear man, the consequence of which being that should it suffer from plague its fleas are within easy reach of man, whose rooms he inhabits. On the other hand, the brown rat is a savage, wild creature, fearing man and shunning his society; consequently, should he suffer from plague he probably distributes his fleas as far from man as he would like to be himself. He lives in the foundation of the house if he live there at all. As a matter of fact, he only lives near human habitations for a half of the year, for which reason he is just half the danger to man that he would be if he lived near him for the whole year—he hies him forth in the glad summertime to the country-side in search of food and makes his burrows in the hedgerows and fields. Another difference between the two species is that the black rat staying at home in the summer time does not fear the great centres of human population; the brown rat, on the other hand, being essentially a country-side rat, and only coming near a human habitation when he cannot get food in the fields, is therefore to be found in greater numbers in the smaller aggregations of human dwellings; he is first a farmyard rat, then a village rat, then a country-town rat, but he is not easy to find in the big towns. Consequently, should the black rat suffer from an epizootic of plague he will produce, owing to the density of the human population, a frightful epidemic, as he does now in India; and as we are told he did in England before the brown rat killed him. While, on the other hand, the brown rat living in more scantily populated districts will not cause an epidemic, other things being equal.

These hypotheses are borne out by actual facts. In India we have the semi-domesticated black rat living in the midst of a teeming population; it suffers from an epizootic of plague measuring 8 per cent., and the whole of the human population is devastated by the disease (see the Indian Plague Commission's report). In a small parish in East Anglia the brown rat was suffering from "a raging epizootic" of 11 per cent., and the human population was in that parish unaffected. The brown rat does make a difference, because he keeps away from the great centres of population. On the contrary, that *Mus decumanus* is a danger if he is living in dense centres of population is proved by the case of Shanghai. Here we are told that *M. decumanus* frequents the squalid surroundings of the native town, and is the cause of much plague.

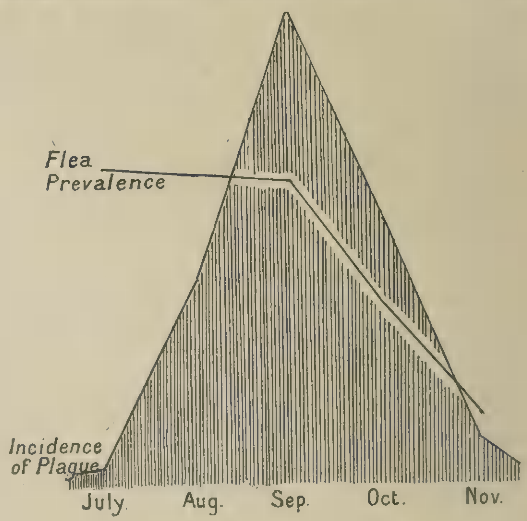
That habit of the brown rat mentioned above—that of wandering abroad in summer in search of food—has the effect, as has been said—(1) of taking him further from human beings and so lessening the chances of infection; and (2) of taking him to the midst of even less dense populations than he is near to in the winter. But it has another effect which lessens still more the chances of infection of human beings, weakening, as it does, one of the links in the chain of causation of the disease, and that is, he is less liable to suffer from plague himself. He disperses over the country-side, and with every yard which he places between himself and the focus of infection he lessens the chances of becoming infected himself by $\frac{\pi r^2.}{2}$ Here, again, the factor of density of a susceptible population comes into play. We have actual figures in support of this. In a certain parish in East Anglia Martin and Rowland (1911) found an epizootic among the rats of 11 per cent. This was in the winter when the flea-rate per rat was 1. Now the flea-rate per rat in summer goes up to 4·5 (Strickland and Merriman, 1911), but the epizootic in the rat does not obtain any greater dimensions in spite of the increased flea-rate, as we would expect from the Indian Plague Commission's reports. Certainly in India the infection-rate is directly proportional to the flea-rate in the rat, but it is not so here, where the brown rat is involved. Far from it, in East Anglia the infection-rate of rats in the summer, 1911, was 30/15,000 = 0·2 per cent. So in spite of the flea-factor being 4·5/1 stronger in summer than in winter, yet the adverse factor, which we take to be the lessened density of the rat population in summer, was so powerful that the epizootic resulting was 0·2/11 or 1/55; that is, the dispersal of the rats in summer lessened their chances of infection by nearly 250 times. And if the rats' chance of infection is 250 times less in summer than in winter, the chance of human infection decreases *pari passu*.

This, therefore, is a distinct difference to the black rat. Whatever the chances of epidemics are now, they are certainly the greater in winter, and Manaud's (1911) statement that plague has a potential incidence in summer now does not seem to us correct. We think that he has overlooked the rat factor.

This fact in connexion with the brown rat seems to us to be evidence that the brown rat if it existed in Europe in the days of the great epidemics never was a factor in the causation of the disease. If it had been we would have records of winter epidemics, but we have not. The danger from plague now lies chiefly in winter, if at all, and all the more so because in a rigorous climate a few sporadic cases due to flea infection might develop into a pneumonic epidemic, as it did in Manchuria lately.

We are told that the brown rat overcame the black rat when it was imported into England after the Great Plague of London. Up to that time, then, the black rat had been solely responsible for the epidemics of plague, and the records show that it was a summer disease or coincident with the period of greatest flea prevalence, which is in summer, as Mr. Merriman and I have shown (1911). (See Chart, also Manaud, 1912.) Now we think it probable, knowing the habits of the rats, that the brown rat did not vanquish the black rat. What caused the disappearance of the black rat, we think, was better housing, and he would have disappeared whether the brown rat were in the country or no. Compare the state of affairs in Java nowadays (Swellengrebel, 1913): there the brown rat has established himself in small numbers on the coast, where are the European establishments; inland it obtains no further holding, for the native houses of bamboo and attap (thatch) are not to its liking. If indeed the brown rat *per se* has overcome the black rat, why not introduce him into Bombay or other plague-stricken centres? If he overcame the black rat once in England, what should prevent him doing it in Bombay? It was better housing which caused the disappearance of *Mus rattus*, and that should be borne in mind in localities where the black rat still persists.

To our mind, probably *M. decumanus* was in the country prior to the Great Plague of London, and as the conditions then were probably somewhat similar to Shanghai native town nowadays, it is possible that he too was responsible for some of the plague then. If he were not in the country then, it only means that the conditions which were unfavourable to the black rat were favourable to him—foundations to houses, sewers, &c., and also the planting of hedgerows which became the vogue just then, as Madam Pitt points out, owing to the scarcity of farm hands. It was not that *decumanus* vanquished *rattus*.



For prevention then it seems very important that the black rat should be eradicated, and this it seems is best done by replacing wooden structures by stone or brick ones. As for the brown rat, he will probably keep himself away from human populations in the summertime; in the winter it must be remembered that all access to food supplies must be denied to him. Paved streets and concrete basements will probably always keep him away, and are therefore an advantage. In suburbs and the outskirts of country towns, and in country villages and hamlets, ferreting and trapping should be carried out *in the winter*, and viruses may be laid then. We cannot hope to reduce the flea-rate of the rat. Baldwin-Latham proves that this is correlated with the vaporous exhalations of the ground. Strickland and Merriman found no close connexion between it and the temperature.

Conclusions.—1. The black rat was responsible for the great plagues of Europe in the past. The epidemics had a summer incidence due to the increased flea prevalence at that season. 2. When good housing became the vogue the black rat disappeared. The brown rat did not vanquish him. 3. At the same time the brown rat increased owing to the introduction of conditions which suited him. 4. He has not proved a factor of any importance in the epidemiology of plague, because—(i.) his shyness of man takes him as far as possible from man and decreases the chances of infecting him; (ii.) his shyness takes him away from the greater centres of population, where it would be easier to start an epidemic—he is essentially a country-side rat; and (iii.) in the summer the fact that he is dispersed over the country-side in search of food lessens the probability of an epizootic among his species by, we calculate, 250 times. This fact also shows that whatever danger he creates is accentuated in the winter, which proves that he was not responsible for any of the epidemics of the past, occurring as they did in summer. It also shows us that the best and most useful time of the year to attack him is in the winter. 5. Measures directed against the black rat should be the replacement of wooden by stone structures; against the brown, no access to food-supplies, street paving and concrete basements; ferreting, trapping, and viruses in the winter; good houses instead of rows of "jerry-built" structures. In general we conclude that plague has no further potential epidemic incidence in Europe, wherever the brown rat has replaced the black

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OCULO-MOTOR PARALYSIS OF OTITIC ORIGIN.*

BY F. H. WESTMACOTT, F.R.C.S. ENG., B.SC. VICT., &C.,
HONORARY ASSISTANT SURGEON, MANCHESTER ROYAL INFIRMARY;
HONORARY CONSULTING AURAL SURGEON, MANCHESTER
CHILDREN'S HOSPITAL, AND ST. JOHN'S HOSPITAL
FOR THE EAR, MANCHESTER.

INTERFERENCE with the function of the third cranial nerve may occur in one of three parts, according to the symptoms produced. Firstly, in the nuclei of origin in the grey column in front of the aqueductus cerebri and the corpora quadrigemina, together with the supranuclear portion. Secondly, in that portion which extends from the point of exit of the united bundle of fibres on the medial side of the cerebral peduncle, just in front of the pons, passing forwards between the posterior cerebral and superior cerebellar arteries to pierce the dura mater beside the posterior clinoid process; in the small triangular space between the free and attached borders of the tentorium cerebelli. Beneath the dura mater the nerve courses through the lateral wall of the cavernous sinus until it enters the orbit through the superior orbital fissure. Thirdly, from its entrance into the supra-orbital fissure and orbit, where it divides, to the terminations of its distribution. It is considered, however, that all lesions below the nuclei are peripheral, all above are cerebral. Landolt classifies all peripheral lesions as orbital (including supra-orbital fissure), basilar, and fascicular, the cerebral as subcortical and cortical.

It is with the second division, or basilar, that the otogenic lesions are intimately concerned, but it is also in this portion that the rhinogenic diseases affect the nerve trunk. It is necessary that some account must be taken of the latter, as well as the concomitant affection of the other oculo-orbital nerve trunks, in order to discuss the differential diagnosis of paralysis induced by disease of the auditory organ in the temporal bone from that originating in neighbouring parts. The number of otogenic and rhinogenic lesions of the oculo-orbital nerves which have been published is small, but of those the latter are numerous and the former rare.

It is necessary to recall the anatomical relationships of the oculo-orbital nerves to the temporal bone to appreciate the pathological changes which may affect each nerve. All the nerves are situated near the apex of the petrous portion, and well out of the way of disease limited to the organ of hearing, but extension of disease by bone or soft parts will have different results. The largest area of contact is that of the trigeminus, which lies in a depression on the anterior and superior surface of the apical region of the petrous bone. The Gasserian ganglion and the three divisions of the fifth nerve are held in position by the dura mater, which is divided and forms the cave of Meckel, the inferior portion forming the periosteal covering of the Gasserian impression, while the upper is closely connected with the tentorium cerebelli and with the dura of the cavernous sinus and the dorsum sellæ.

The next most extensive relation, appearing at the pyramid and posterior border of the pons, is the abducens, which pierces the dura mater in the posterior fossa postero-laterally to the dorsum sellæ, entering the cavernous sinus medial to the fifth nerve to reach the superior orbital fissure, on a lower level and deeper than the oculo-motor. It is in immediate proximity to the petro-occipital suture, the inferior petrosal sinus, and the apex for a distance of about 3 cm. Dorello describes a narrow cleft in which the abducens runs along with the inferior petrosal sinus, and is firmly bound down to the apex of the pyramid by connective tissue and dura as well as the petrosphenoidal ligament. The fourth nerve passes into the dura and cavernous sinus at the anterior attachment of the tentorium cerebelli, just above and to the inner side of the trigeminal nerve, but external to and above the abducens. It lies inferior also and enters some distance behind the oculo-motor.

The oculo-motor nerve is relative to the temporal bone in the second of the divisions described above—namely, the extradural portion and its continuity through the external wall of the cavernous sinus, being separated from it posteriorly by a thin membrane, whilst in front it lies in the blood stream. It is, however, the most distal relation of the oculo-orbital nerves from its superior position in the sinus. It is in this situation that it gets communicating fibres from the sympathetic plexus surrounding the internal carotid artery, which passes upwards at the apex of the petrous bone, close to the third nerve in the cavernous sinus. It also receives sensory fibres from the ophthalmic division of the fifth nerve.

Paralysis of the several ocular muscles may be simply classified according to groups of muscles affected as follows: (1) Unilateral partial ophthalmoplegia or paralysis of certain muscles of one eye; (2) unilateral total ophthalmoplegia or paralysis of all the muscles of one eye; (3) bilateral partial ophthalmoplegia; and (4) bilateral total ophthalmoplegia. Ophthalmoplegia may be complete or incomplete according to extent of function interfered with. Unilateral partial ophthalmoplegia is produced by paralysis of the oculomotor nerve, and two distinct forms are found: (1) external ophthalmoplegia—the external muscles of the eyeball are alone affected, excluding the lateral rectus and superior oblique; and (2) internal ophthalmoplegia, in which the internal muscles, the sphincter of the pupil and the ciliary muscle, are paralysed.

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External ophthalmoplegia is due to a lesion in the oculo-motor nucleus at its inferior portion, whereas internal ophthalmoplegia is caused by a lesion in the upper or anterior part of the column of origin of the third nerve—the most anterior nuclear group giving origin to the nerve fibres supplying the levator palpebræ superioris. Either an internal or external ophthalmoplegia may follow the other from extension of the lesion. An internal ophthalmoplegia sometimes arises from a lesion inside the orbit due to affection of the short root of the ciliary ganglion, but here is found, in addition, a paralysis of the inferior oblique muscle, and is frequently due to disease in the ethmoidal cells.

Paralysis of all the muscles supplied by the oculomotor nerve, without other muscles being implicated, is caused by a nerve lesion before its entrance to the cavernous sinus, a distance varying from two to three centimetres, and it is usually in this position that disease of the auditory apparatus and temporal bone will attack the nerve by continuity. In the cavernous sinus it is probable that the fifth, fourth, and possibly the sixth nerves will be affected according to whether the pressure is from within the cavernous sinus due to thrombosis or aneurysm of the carotid artery or whether the pressure is on the external sinus wall. Disease of the sphenoidal cell is frequently in causal relationship with this manifestation, since the cavernous sinus and its contents are in close contact with the outer wall of the sphenoidal cavity in varying degrees, as described by Onodi.[1] In the superior orbital fissure the nerve lesion would be accompanied by damage to the other oculo-orbital nerves. In both situations there would be unilateral total ophthalmoplegia. If, however, a lesion affected all the nuclei of the oculo-motor nerve there would be two additional factors—firstly, the crossed fibres passing to the other eye would be affected; and, secondly, the fibres arising from the seventh nucleus to the orbicularis oculi, close to the origin of the fibres of the levator palpebræ, being attacked would cause paralysis of the orbicularis and absence of the usual symptom in complete oculo-motor paralysis, that of the raised eyebrow on the affected side. A further point of importance would be the presence of abducens paresis or paralysis of the opposite side (associated fibres). Slight affection of the lateral rectus and superior oblique is sometimes observed in total paralysis of the third nerve, demonstrated by the field of fixation limitation in the lateral and infero-lateral part (E. Landolt[2]).

Uhthoff has described a recurring ophthalmoplegia in neoplasm of the oculo-motor nerve trunk. Total but transitory ophthalmoplegia, with severe pain, headache, and vomiting, may affect one or other eye, and is nuclear in origin, and spoken of in France as "migraine ophtalmoplégique."

If paralysis of the oculo-motor occurs without affection of abducens and trochlear, and associated with paralysis of the opposite side of the face and body (symptom-complex of Weber), it is suggestive of a lesion on the inner side of the crus cerebri, and is generally due to syphilitic softening, but it may be due to a hæmorrhage or tubercle arising in the temporal bone or base of the skull. The more complete the paralysis of the oculo-motor nerve, the nearer the lesion is to the surface of the crus cerebri after concentration of fibres, and the greater is the lesion. If an irritative lesion exists in the crus cerebri, instead of paralysis there is limitation of the muscles supplied by the third nerve, and on the opposite side of the body contraction or tremors of the limbs, producing what is known as the Benedikt symptom-complex.

Unilateral total ophthalmoplegia can only be caused by a lesion in the orbit, the superior orbital fissure, or in the cavernous sinus. In the region of the orbital fissure it is generally syphilitic. Owing to a thin wall of the sphenoidal sinus and the possibility of dehiscences it may be due to suppuration in that cavity. In cavernous sinus thrombosis there are symptoms of venous congestion; and when there is exophthalmos with pulsation it indicates an arterio-venous aneurysm from rupture of the internal carotid into the cavernous sinus. Other causes of unilateral total ophthalmoplegia are hæmorrhage, exudations, sinus empyema, neoplasms, foreign bodies such as bullets, and thrombosis of orbital veins or veins going to the cavernous sinus from the sphenoidal cavity.

Bilateral partial or bilateral complete ophthalmoplegia are nuclear in origin or due to basal neoplasmata.

As regards the causes of oculo-motor paralysis, I shall limit the description as far as possible to those which arise directly or indirectly from disease of the auditory apparatus or temporal bone, and affecting the second division or basilar portion of the nerve. As to trauma, bullets entering the temporal bone may cause division of or direct pressure on the trunk of the third or other nerves, or indirectly may cause pressure by hæmorrhage or exudation or subsequent inflammation and suppuration in bone or meninges. Inflammation commencing in the middle ear or adnexa may spread by direct cellular continuity to the apex of the petrous portion of the temporal bone. There may be infection and direct extension of pathological processes, streptococcal or staphylococcal in origin, by continuity of tissues and by lymphatics along the vessels, especially the tympanic plexus, and nerves; hence a circumscribed meningitis may be set up and result in nerve pressure or infective toxæmia. Gradenigo was one of the first to establish this. Urbantschitsch first regarded the paralysis as reflex in origin, but this has never been proved except where disease is present in the labyrinth. Thrombosis of veins, more particularly the inferior and superior petrosal sinuses, spreading backwards to the cavernous sinus, may cause pressure on the oculomotor nerve. The former is more likely to affect the abducens, which lies for some distance in contact with them, but thrombosis or periphlebitis may directly attack the third nerve, the specially vulnerable point of which is just before entry into the fold of dura mater split by the trigeminus and the cavernous sinus.

An illuminating case which came under my care is worthy of review because it definitely illustrates the pathological sequence and association of middle-ear disease and oculo-motor paralysis, which is the rarest form of otogenic nerve lesion.

On Nov. 22nd, 1912, I was asked to see a young lady, aged 29 years, when the following history was given. On Nov. 14th she had a sudden attack of vertigo near a hot baking stove. She was inclined to fall, but recovered herself. About 8.30 P.M. she went out of doors, but felt "useless" and returned home. About 9 P.M. she vomited and was purged. Whilst in the bathroom she had an attack of vertigo and fell; got up again, vomited again, and fell once more, striking her head, but did not know where. She thought it was the eye that had been struck when she found she could not open it. There was, however, no mark of bruise or injury. She was unconscious for 16 hours, and vomited during that time. She felt no pain in the head or eye. No vomiting occurred after recovering consciousness.

On Nov. 21st Dr. J. Gray Clegg, an ophthalmic surgeon, was called in, and I am indebted to him for his notes on the examination of the eye. He found complete paralysis of the third nerve on the right side, with ptosis. There was no proptosis and no pain in the eye, but some tenderness on pressure over the upper part of the eyeball. The external rectus and superior oblique were unaffected, the seventh nerve also. The fundus and retinal vessels were normal. He diagnosed pressure on the trunk of the third nerve behind the right orbit. He was told that she had had intermittent slight discharge from the right ear for some years, with a foul odour at times, also slight deafness on that side. There was no history of nasal discharge. The temperature was 99° F. He recommended examination by an aural surgeon.

When asked to see the patient I found her in bed. She was able to answer questions, although she was in a dazed condition. She could hear the voice in an ordinary tone each side, but no specific hearing tests were applied. The nasal cavities presented no evidence of accessory sinus disease. The left ear showed some signs of old catarrhal otitis media. The right meatus was full of brown soft cerumen and cholesteatoma. On removal of this by syringing a perforation ⅛ inch in diameter was seen in the posterior superior quadrant, through which a drop of pus exuded; the remainder of the tympanic membrane was white, thick, and opaque, and the ossicles were not distinguishable. There was no pain in the ear or tenderness over the mastoid process or head. The right eye demonstrated all the classical signs of total paralysis of the oculo-motor nerve. There was ptosis of the right eyelid with very slight protrusion, divergent strabismus, with slight downward rotation, pupil moderately dilated and almost fixed; the right eyebrow was higher than the left. There was no headache or photophobia, but this was present in a slight degree some days later. The fourth, fifth, sixth, and seventh nerves were unaffected. The eyeball could be moved outwards a little further than the rest position, showing the sixth nerve to be free. There was no rotation to the normal side, and upward and downward movements were limited. The right eyebrow was slightly raised above the level of the left one. There was no ecchymosis or œdema of the lids.

On lifting the eyelid and testing the vision it was found that there was crossed diplopia. On placing an object on the axial plane necessitating turning the eyes to the extreme left, the false image was far to the left and inclined towards the affected side. When placed sagitally and below, the false image was below and to the left of the true image; when placed upwards the false image was well above the true image. There was no nystagmus. On testing the pupil reflexes the left one was found to be moderately small and contracted normally to light. The right pupil contracted very slightly, but there was no consensual reflex. Accommodation could not be tested.

From the history and the symptoms present I concluded there was pressure on the oculo-motor nerve, close to the dura mater triangular space before its entry into the cavernous sinus, and near to the apex of the petrous bone. The fourth nerve being free, the pressure was not exerted very far outwards and backwards. There was no intra-orbital pressure, and the superior orbital foramen was free, because the fourth, fifth, and sixth nerves were unaffected. It was because of the cholesteatoma found and the drop of pus on its removal that I advised an exploratory operation through the mastoid antrum. The patient was removed to a nursing home. Menstruation had commenced the day before. After admission she was still drowsy; the temperature was 100° and the pulse 76. Three grains of calomel with castor oil were given. At 6 P.M. the temperature was 101°, pulse 92. She passed a restless night, and next day the temperature was 100°, pulse 84, tension normal, no albuminuria. Nerve reflexes were normal; Kernig's sign was absent. No headache or vomiting; no change in the eye symptoms. She became more drowsy during the day and night.

Operation on Nov. 24th, 10.30 A.M. A post-aural curved incision was made. On chiselling through the dense cortex for 1/16 inch at the antral triangle, the lateral sinus was opened and the vein seen pulsating. This was situated far forwards and close to the sloping wall of the posterior border of the external bony meatus so often observed in the diploetic type of process. A second opening was made above this and the skull cavity was entered, the dura mater being observed to pulsate feebly. The bone between this and the upper and posterior wall of the meatus was extremely dense. At a depth of half an inch from the level of the mastoid cortex the antrum was reached and found to contain pus and fleshy granulations. It was very small, being about 4 millimetres in diameter. On exploration an aperture was discovered in the roof through which pus came after wiping out the cavity. This aperture was about 3 millimetres across. It was enlarged and about half a drachm of pus escaped. A track was found extending inwards for over half an inch, and the bone was removed for that distance. The dura mater did not pulsate and was greyish in appearance. As a little pus could be seen coming from the line of the superior petrosal sinus, a drain of gauze about 1½ inches long was put in. The wound was packed after excising the posterior wall of the cartilaginous meatus.

The temperature dropped to 98·6°, with pulse 92, at 2 P.M., being 99·2° and 88 respectively the same evening. There was no sickness after chloroform, and she slept well the night after operation. Next morning the temperature was 98° and pulse 80. This condition was maintained till 6 P.M. on the 28th, when the temperature reached 100° with pulse 100. She complained of a little headache during the previous night and all that day. She vomited once, at 6.45 P.M. About midnight she had a severe attack of general convulsions, lasting half an hour. There was evacuation of fæces and urine, and a very dark menstrual flow. The temperature was normal, and pulse 80 and very difficult to feel. She was unconscious during the attack, but afterwards spoke rationally on questioning her, and complained of having had a terrible dream. The right eye and cheek were slightly œdematous. The ocular symptoms were the same, and there was no vomiting. The wound was dressed. There was recent blood on the dressing and a little pus in the deep recess of the wound, but otherwise it was healthy. The sinus was pulsating. Bromidia dr. 1 was given and repeated in an hour. She vomited after the second dose, but slept well after a third dose. She slept a good deal day and night after this for several days.

On Dec. 1st the temperature rose to 101·8° and pulse 98. She complained of a little frontal headache. The wound was healthy and there was no pus. The œdema of the eyelid had almost disappeared. There was much constipation, although calomel was given every other day. Quinine and strychnina were also administered. The temperature was normal on Dec. 3rd, and with the exception of a slight rise on the 7th and 8th it remained normal afterwards. She made a slow but uninterrupted recovery.

I saw her again on Jan. 20th, 1913. She was able to get up and about the house, had recovered some of the use of the eye muscles, and the wound was almost healed. The eyelid could be half opened, and the false image was closer to the true image than before operation. I did not see her again till May 23rd, 1913, when she could walk well, but the diplopia confused her out of doors. The ptosis was hardly noticeable and the strabismus slight but discernible. On the normal side the false image was a little to the left, and present still on looking upwards. The fundus was normal. The pupil was a little larger than the left, and reacted fairly well to light and accommodation. Hearing tests: Rinne, right and left, C to C3 negative, C4 positive. Speech, right and left 10 ft. ; whisper, right and left 9 ft. Weber's test lateralised to right. When C tuning fork was placed on the left mastoid it was heard on the right side, the sound appearing to go round the back of the head. Schwabach test C right – 5 sec., left – 3 sec. Watch, right 4 inches, left 7 inches. The right meatus was lined by healthy epithelium. Posteriorly the scar showed slight depression only. I have seen the patient at intervals up to June 29th last, and she has kept perfectly well. There is no ptosis and very slight diplopia on looking upwards only.

In this case the cause was primarily cholesteatoma, which had eroded through the tegmen antri and set up a subdural abscess. The infection worked along the superior petrosal sinus, and so to the trunk of the oculo-motor nerve. It became acute and caused the rapid development of symptoms.

Tröltsch, Ostmann and Hilgermann, cited by Onodi,[1] described similar extension to the petrous apex of purulent otitis media, affecting the oculomotor nerve. Scotti[1] observed destruction of the Gasserian ganglion from necrosis of the apex, after separation and extrusion of a sequestrum through the external auditory meatus. Bircher[1] found oculo-motor paralysis and irritation of the fifth nerve in phlebitis of the lateral, inferior petrosal, and cavernous sinuses, which disappeared after operation. Sikkel[1] records trigeminal neuralgia due to irritation of trigeminus and Gasserian ganglion in otitis media. Jansen[1] and others have described cases of lesions of oculo-motor, together with abducens, trochlearis, and trigeminus, in phlebitis and thrombosis of temporal bone venous sinuses. Sargnon records two cases of complete oculo-motor paralysis with brain symptoms where caries existed in the temporal bone, with disease of the outer wall of the cavernous sinus.

Periodical recurrent paralyses of the third nerve have been reported by Wadsworth, Michel,[3] and others in suppurative otitis media. Michel's case recovered after a free discharge of pus. Wadsworth attributes the phenomenon to inflammatory meningeal changes in the region of the oculo-motor. Eversbusch discusses the possibility of otogenic neuritic change, or of toxic inflammation in these cases, but such a purely toxic effect upon the nerve fibres has not been proved. Toxic neuritis is described by Gerouzi, Baldenweck, Lannois, and Perretière. A recurrent paralysis of the abducens has been observed by Chierici in purulent otitis media, which recovered on free discharge of pus, but reappeared twice afterwards. Abducens paralysis of otogenic origin has been described by several observers, such as Dorello and Baldenweck, some of which remained after operation and cure of the initial lesion (Krepuska). Perkins described 100 cases of abducens paralysis, of which 25 appeared after operation, and in half the cases the Gasserian ganglion was involved. Dorello and Baldenweck point out a direct relationship between the veins of the tympanic cavity and of the inferior petrosal sinus, and of congenital dehiscences in the bone of the anterior wall of the tympanic cavity. Certain ocular reflexes have been observed from otogenic irritation, such as abducens paralysis by way of the vestibular nerve, but no record can be found of similar affection of the oculo-motor nerve.

Paralysis of the oculo-motor nerve has been recorded in temporo-sphenoidal and cerebellar otogenic brain abscess. Lombard[4] believes that when signs of intracranial abscess are present in a suppurative otitis media, if there is oculo-motor paralysis it denotes temporo-sphenoidal abscess, and abducens paralysis indicates cerebellar abscess. Tuberculous or syphilitic disease of the temporal bone may produce oculo-motor paralysis, causing direct pressure on the trunk of the nerve. Otogenic paralysis of the trochlearis has been recorded by Schwartze, De Lapersonne,[5] and others. Jacques twice observed external ophthalmoplegia follow acute otitis media in infants, accompanied by ptosis; one died with all the signs of acute meningitis.

To sum up, it appears that otogenic paralysis of the oculo-motor and other orbital nerves is clearly established, but our difficulty arises when we endeavour to establish the pathological lesion present. When paralysis exists with an ipsolateral otorrhœa, accompanied by headache and vomiting, an exploration of the auditory apparatus should be at once undertaken to determine the extent and limits of the disease, whilst at the same time it should be borne in mind that the examination of the nasal fossæ and accessory cavities may reveal the focus of disease, insomuch as nasal disease infection is far more common than aural infection in the production of paralysis of the oculo-orbital nerves.

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Manchester.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF HYDATID CYST OF THE KIDNEY.

By ROBERT E. HALAHAN, M.D. DUB.,
SURGEON TO THE BRITISH HOSPITAL, BUENOS AIRES.

THE patient, a female 23 years of age, had been complaining for some months back of dragging pains in the right loin, sometimes associated with nausea. There was no tenderness on pressure, and the kidney, which was movable, could be felt quite easily. The urine was normal, and no adequate cause could be found for the pains, &c., as the movable kidney seemed hardly likely to produce as much discomfort as the patient complained of. However, I decided to fix it, and on exposing it through a lumbar incision a tumour of about the size of a small orange was found adherent to the convex border. The organ was easily delivered through the wound, and then the nature of the growth was quite obvious.

The cyst was growing on, rather than in, the kidney, extending for only a short distance within the actual kidney substance. The result was that when the tumour was laid open the base presented as a sort of small saucer, about 4 or 5 centimetres in diameter. I decided to cut this base entirely free. Having first passed a short silk ligature round the pedicle of the kidney, ready to tie in case the hæmorrhage became too profuse, a rather flat-shaped wedge of kidney was cut off the cortex in such a way as entirely to remove the base of the cyst, leaving a large open wound. The hæmorrhage was pretty severe, but was controlled by passing catgut sutures through the whole thickness of the kidney so as to embrace the floor of the wound, and tying them as tightly as the kidney substance would allow. In this way the wound was almost completely closed. The skin wound was closed by interrupted sutures and a drainage-tube inserted down to the wound in the kidney. Beyond a urinary fistula which developed on the fifth day, and lasted for 18 days, the convalescence was uneventful, and the patient left completely healed in five weeks.

Buenos Aires.

A CASE OF INTRAUTERINE RUPTURE OF THE UMBILICAL CORD.

By Harold E. Bloxsome, M.R.C.S. Eng., L.R.C.P. Lond.,

SURGEON TO FAIRFORD COTTAGE HOSPITAL; MEDICAL OFFICER AND PUBLIC VACCINATOR, CIRENCESTER AND NORTHLEACH UNIONS.

The patient was a primipara supposed to have been pregnant ten months. When I was sent for she had been in labour for 12 hours. Per vaginam the os was nearly fully dilated, the head was presenting by the vertex, and the pains were severe, the patient describing them as being almost continuous, though there was no distress. The nurse was sure no liquor amnii had come away, but no bag of membranes could be felt. I waited an hour and a half and the os was then fully dilated, though the head had not descended much. Chloroform was given and the forceps applied. As the face swept over the perineum after a moderately hard pull the cord fell out divided in two. There was a large blood clot on each severed end. The child was large and stillborn. There was no sign of pulsation in either part. The placenta subsequently came away in a normal manner. The head had been firmly engaged in the pelvis, and I felt all round the os, so it would have been difficult to have missed a prolapsed cord.

Dr. Herbert Williamson takes the case to be one of a short cord round the child's neck delaying descent and subsequently rupturing. The rarity of such cases is my excuse for bringing it under notice.

Fairford.

NOTE ON A CASE OF CONGENITAL LARYNGEAL STRIDOR.

By J. H. Sheldon, M.B. Lond., &c.

Cases of congenital laryngeal stridor seem to be sufficiently uncommon to warrant the following notes of the first case encountered in nearly 17 years of general practice.

The patient, seen in February, 1914, was a well-nourished male Madrassee infant, 5 months of age, born prematurely in the eighth month of the mother's first pregnancy and hand-fed from birth. The infant's medical history was good and he presented no signs of syphilis or rickets. One tooth was almost through. He was bright and intelligent. The family history indicated nothing except the occurrence of asthma in the children of an aunt of the patient's father. The chief features of the case were: (1) stridor present from birth; (2) transverse furrowing of the lower chest wall; (3) certain auscultatory signs; (4) absence of cyanosis; (5) absence of laryngeal excursion; (6) a heart-rate uninfluenced by respiratory movements; and (7) the excellent health of the child. The stridor accompanied each inspiration, and, with the exceptions to be given, was always present, both sleeping and waking. It disappeared for short periods (half an hour) during sleep and for shorter periods while the child lay awake quiet and with his attention fixed, and while taking the bottle. The sound produced was for the most part a hoarse and low-pitched crowing of varying loudness, but generally heard at a distance of some yards. When the child was excited the stridor became loud and shrill (high pitched). I was informed that the noise was not noticeable when the child cried. During a quiet period the shape of the chest was almost normal, though the sternum was slightly prominent and indications of a transverse lateral sulcus were seen. There was no parasternal grooving. During periods of stridor each inspiration was accompanied by great recession of the lower ribs and costal margin opposite the ensiform cartilage, and the formation of a deep transverse sulcus extending out from the costal margin almost to the anterior axillary line. The alæ nasi dilated with each inspiration. The inspiratory murmur during stridor was interrupted and subdivided sometimes into two, sometimes three separate and distinct sounds. Expiration was unaltered. There were no adventitious sounds.

Reading.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OPHTHALMOLOGY.

Exhibition of Cases.—Cysts in the Anterior Chamber.

A meeting of this section was held on Nov. 4th, Mr. **Priestley Smith**, the President, being in the chair.

Dr. A. **Hugh Thompson** showed a young girl who had Dilated Pupil of Argyll Robertson type, with well-marked contraction on closure of lids. The condition was not congenital in her, because two years ago her pupils were normal and she had only slight myopia. The knee-jerks were normal. He also exhibited a case of One-sided Internal Ophthalmoplegia. The man was invalided two years ago on account of supposed aneurysm. No aneurysm had been found, though he was carefully examined by Sir John Broadbent.—Mr. W. C. **Rockcliffe** spoke of two cases in his experience with mydriasis and iridocycloplegia. In one there was a strong family history of retinitis pigmentosa, but in the patient there was no retinal or pigmentary change. One patient's end was in an asylum as a general paralytic.

Mr. N. **Bishop Harman** showed a case of Congenital Entropion. The lashes in the lower lid were permanently erect and the child was born with the condition. The meibomian glands seemed deficient. The mother was normal, but the grandmother was said to have had a double row of lashes. He proposed to split the lid, so as to separate the lashes from the glands, and graft between the two a strip of mucous membrane. If that succeeded he expected the lashes would be prevented from reaching the cornea again.—Mr. M. S. **Mayou** referred to three similar cases which he had had. He operated upon them by taking out a narrow band of skin on the outer side of the lid. There had been no recurrence, though one was operated upon five years ago.

Mr. **Bishop Harman** read notes of a case of High Myopia in an infant.

Mr. W. H. H. **Jessop** showed a case of Tumour of the Lower Lid which he regarded as a lymphangioma. A former term applied to it was elephantiasis nostras. Skiagrams showed nothing abnormal about the bones, and skilled nasal investigation was negative.—Lieutenant-Colonel R. H. **Elliot**, I.M.S., mentioned a similar case which he saw in India, and which was found to be sporotrichosis ochonelia.—Mr. **Leslie J. Paton** said he had seen a similar case following the extensive scarring of lupus, and there was complete blockage of the lymphatic ducts draining the eyelid. He sent the case to a colleague with the request that he would establish a permanent drain into the lymphatics of the lip.—Mr. **HARMAN** reminded members of a case shown at the Laryngological Section in which draining was done into the neck, and answered fairly well.

Mr. A. W. **ORMOND** exhibited a doubtful case for diagnosis, which was generally regarded as inflammatory.

Mr. H. L. **EASON** exhibited an interesting example of Confluent Tubercle of Iris. Tuberculin had not improved it. As perforation was occurring in the ciliary region, the only course was removal of the eye. He had had a case in which perforation occurred in three weeks; in this case it commenced in the fifth week of the history.

Mr. A. H. P. **DAWNAY** showed a patient suffering from Intra-ocular Metastatic Carcinoma.

Mr. W. T. **HOLMES SPICER** read a communication entitled "Cysts in the Anterior Chamber arising from the Pars Ciliaris Retinæ," and illustrated it by a number of slides. The case had been under observation seven years; it began with a white spot at the edge of the pupil at 3 months of age. At 16 months, when first seen, there were three opaque finger-shaped masses coming into the anterior chamber from behind the iris. Four years later these had disappeared, and a cyst about 4 mm. in diameter was seen floating freely in the anterior chamber. Other cysts appeared later, and finally there were seven, floating like toy balloons in the anterior chamber. In the meantime the eye had become glaucomatous, a ciliary staphyloma had formed, and the eye was removed. The pathological examination was made by Mr. Greeves. It was found that the cysts were formed of embryonic retinal tissue containing vitreous. They had their origin in the pars ciliaris retinæ, starting from cellular membranes, which grew over the iris and also into the vitreous; the cysts grew on the surface of these membranes. There was in many places in the walls of the cysts a resemblance to glioma tissue. The case further proved the non-mesoblastic origin of the vitreous.—Mr. **TREACHER COLLINS**, discussing the case, said it bore out the view of embryologists that the vitreous humour was derived from neural epiblast; it further showed it was derived from only one portion of it.—Mr. **MAYOU** referred to a case of his own in which there was a pigmented tumour in a microphthalmic eye, consisting of epithelial cells. It only occupied an eighth of the segment of the ciliary body.—Mr. W. **LANG** spoke of a case he saw with Professor Fuchs in which there was a semi-translucent brownish cyst in the anterior chamber. Since then he had had a similar case of his own, but an attempt to deal operatively with it was not a success.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Exhibition of Cases and Specimens.—The Coxalgic Pelvis: its Lateral Tilting.

A **MEETING** of this society was held in Liverpool on Oct. 16th, Dr. J. H. **WILLETT**, the President, being in the chair.

Dr. W. K. **WALLS** (Manchester) exhibited a specimen of Double Hydrosalpinx and Tubo-ovarian Cysts removed with the body of the Uterus from a young woman, married some months, whose appendix had been removed a few years previously.

Dr. W. E. **FOTHERGILL** (Manchester) described a case of Double Uterus with Right Pyocolpos. This case presented great difficulties in diagnosis. The patient was a virgin, aged 22 years, with normal menstruation, who complained of pelvic pain of some days' duration and had a raised pulse and temperature. On examination two masses could be felt which, on account of the symptoms, were taken to be the uterus and a matted appendage. The abdomen was opened and the masses found to be the two halves of a double uterus, with no sign of inflammation, below which, on the right side, a fluctuant swelling could be felt. This swelling was opened from the vagina and proved to be the occluded right half of the vagina filled with pus.

Dr. J. E. **GEMMELL** (Liverpool) exhibited a specimen of Adenocarcinoma of the Uterus, removed from a patient, aged 52 years, who complained of pain and a slight vaginal discharge.

Dr. H. **BRIGGS** (Liverpool) showed: (1) A specimen of a Soft Resilient Interstitial Uterine Fibroid from a woman, aged 30 years, on which there was great difficulty in making a diagnosis between fibroid and pregnancy; (2) a Stony Hard Fibroid which was difficult to diagnose from an ovarian fibroma; and (3) a Uterus from a case of post-climacteric hæmorrhage.

Dr. W. **FLETCHER SHAW** (Manchester) described a case of Septic Miscarriage followed by Intestinal Obstruction. The obstruction occurred a fortnight after the miscarriage, which had been followed by sepsis, the symptoms of which had abated. An abdominal section revealed a loop of small intestine adherent to a mass of glands in the region of the sacral promontory. The loop was freed and the patient did very well for two days, when acute peritonitis supervened, for which the abdomen was again opened and drained. The patient made a good recovery. In all probability the glands were enlarged from the septic uterus.

Dr. **BRIGGS** read a note on the Coxalgic Pelvis: its Lateral Tilting. He described a specimen from the pathological museum which was mounted by the surgeons with the diseased side lowest. He discussed the specimen from the obstetricians' point of view, which was that the specimen should have been mounted with the diseased side highest.

ÆSCULAPIAN SOCIETY. — A meeting of this society was held on Oct. 6th, Dr. David Ross being in the chair.—Dr. Philip Hamill read a paper on Obesity. He said obesity may be defined as a considerable excess of body weight over the accepted standards for normal individuals of the same height and age. The chief disadvantage of obesity lies in the increased work and strain on the heart during bodily exertion. Respiration and cardiac efficiency are hampered by a corpulent abdomen, and the obese are frequently short-winded, emphysematous, and bronchitic. They possess a lower resistance to acute infections and are unfavourable subjects for operations. Gout and vascular affections are common in obesity, and chronic interstitial nephritis frequently develops. In young subjects and adolescents obesity is not uncommonly associated with delayed puberty; the majority of these subjects became normal during the third decade. A certain number of cases of obesity appear to be associated with deficient pituitary or thyroid secretion, as in Fröhlich's syndrome, adiposis dolorosa, and myxœdema. In obesity the increase of fat is the result of an intake of food in excess of the energy requirements of the body. Very slight habitual excess will in time produce a considerable increase in fat; thus a daily excess of ½ oz. of fat, or of the nutriment represented by ½ pint of ale will account for an increase of 1 st. in weight in the course of a year. Obesity commonly manifests itself about the age of 40, at which time most persons diminish the amount of exercise taken in walking, games, &c.; at the same time, prosperity is commonly associated with a more liberal diet. Temperament is an important factor; those of a phlegmatic, restful habit put on flesh, whilst others of active disposition who constantly make small movements remain thin, for these slight differences in activity account for a considerable expenditure of energy in the course of a day. It is probable that temperament is the most important factor in heredity and racial tendencies to obesity. Steps should be taken to reduce obesity when it is excessive or when it interferes with the functions of any organ. Reduction is particularly indicated in gouty individuals, but is contraindicated in the aged and in the presence of diabetes, however mild, tuberculosis, and manifest renal disease. It should be noted that many obese individuals develop chronic interstitial nephritis, consequently in presence of raised blood pressure reduction should be gradual to avoid precipitating the onset of the disease. Rapid reduction of fat is liable to produce muscular and cardiac weakness, and should not be undertaken unless the patient is under close observation in an institution. Except in special circumstances it is always desirable to proceed slowly and to vary the patient's conditions of life as little as possible consistent with attaining the desired result. He is thus gradually educated to a rule of life, and is then less likely to relapse. The weakness and exhaustion which commonly follow rapid reduction result in diminished activity and overfeeding, with the result that the lost weight is speedily regained. A loss of one or two pounds monthly for the first six months is ample in most cases, and for the rest of the first year half this rate of reduction suffices. In general the careful avoidance of fat, restriction of alcohol, and very slight restriction of carbohydrates will bring about the desired result. Great restriction of carbohydrates is not desirable. Walking on a gentle incline is a valuable form of exercise which can be accurately measured and which strengthens the heart. Massage is useful in anæmic patients for improving muscular tone and enabling them to take exercise without exhaustion. Special attention should be devoted to improving the tone of the abdominal muscles in order to guard against unpleasant sensations associated with the diminution of the omental fat. Cold baths are useful where applicable; thyroid is not advisable in other than myxœdematous patients; and iron and strychnine are particularly valuable in anæmic obesity.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on Oct. 22nd, Mr. J. Jackson Clarke, the President, being in the chair, when a number of clinical cases were shown.—The President showed a series of four cases of Gunshot Fractures incurred in the war. One of these was a comminuted fracture of the humerus caused by a rifle bullet; the remainder were due to shrapnel.—Dr. S. Melville spoke of the difficulties met with in the localisation of bullets by X rays.—The cases were discussed by Mr. V. Z. Cope, who recounted an example of severe shrapnel wound in the forearm. Troublesome hæmorrhage had occurred some time after the injury. The bleeding points were widely distributed all over the wound. Apparently both the radial and ulnar arteries had been severed and a free anastomosis had resulted.—Dr. Leonard G. Guthrie showed a case of Congenital Syphilis of the Nervous System in a girl. The knee-jerks were absent, but there was bilateral extensor plantar response. The gait was typical neither of cerebellar nor spinal ataxy. She walked in an awkward shuffling manner, swaying the trunk from side to side, the feet everted, with a tendency to drag them. The pupils reacted neither to light nor to accommodation. There were pegged teeth and old disseminated choroiditis. The Wassermann reaction of the blood was positive. Her mental capacity was good.—Sir John Broadbent showed a case of Pulmonary Stenosis, and also one of Aortic Regurgitation and Stenosis with Mitral Stenosis.—Dr. W. H. Willcox showed cases of Temporo-sphenoidal Tumour; Rat-bite Fever in a boy, in which the symptoms were recurrent fever and erythema; Neoplasm of the Stomach, in which a large stomach tumour had arisen without previous gastric symptoms, and which was thought to be a sarcoma; and Pituitary Tumour in a man who had the usual evidences of acromegaly. —Dr. Frederick Langmead showed a case of Congenital Family Cholæmia. It was that of a man, aged 45, whose two daughters, aged 4 and 6 respectively, suffered from the same complaint. The usual features were present except increased fragility of the red blood cells. The question of splenectomy was raised.—Dr. G. de Bec Turtle showed a case of ? Patent Ductus Arteriosus in an adult. A systolic murmur was audible with greatest intensity in the pulmonary area, but not in the back. Signs of heart failure were present.

McQUITTY MEMORIAL PRIZE.—This prize for 1914 has been awarded to Mr. A Fullerton, M.B. The prize, which is open to students in their final year at the Royal Victoria Hospital, Belfast—the subjects being medicine, surgery, gynæcology, pathology, and ophthalmology—was founded as a memorial of the late Dr. W. B. McQuitty.

THE LATE SIR KAI HO KAI, M.B.—At a meeting of the University Lodge of Hong-Kong (No. 3666) the Worshipful Master, Dr. Francis W. Clark, made eloquent reference to the death of Sir Kai Ho Kai, C.M.G., M.B., C.M. Aberd., barrister-at-law. "One of the small band of pioneers who realised, even 30 years ago, that the future of China's greatness lay in the hands of those of his countrymen who were prepared to share the knowledge and the science of the West." Sir Kai Ho Kai was a founder of the Hong-Kong College of Medicine and one of the prime movers in the establishment of the University.

Reviews and Notices of Books.

Anoci-Association.

By GEORGE W. CRILE, M.D., Professor of Surgery, Western Reserve University, Visiting Surgeon to the Lakeside Hospital, Cleveland; and WILLIAM E. LOWER, M.D., Associate Professor of Genito-Urinary Surgery, Western Reserve University, Cleveland. Edited by AMY F. ROWLAND. Original illustrations. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 200. Price 13*s.* net.

AT a first glance the title of this monograph may to many seem somewhat strange. To those, however, who are familiar with the modern nomenclature of the receptor mechanisms of the body it presents no difficulties. All of life is filled with *noci-associations*—injurious if you will—as a result of which the stored energies of the body are constantly drained. The *noci-ceptors* are richly implanted in the skin. The object of the authors is to consider the pathology of shock in its varied aspects—traumatic, emotional, toxin and protein shock, drug shock, and the practical application of the kinetic theory of shock in the development of the *shockless operation* through anoci-association.

All successful surgery must finally be based on physiological principles. For long it was supposed that if the patient during an operation was thoroughly anæsthetised and infection avoided, the operation itself—apart from the actual traumatic intentional lesions—had but little effect on the economy. An account is given of the kinetic theory of shock and the principle of anoci-association, and the application of the kinetic theory to the technique of surgical operations is described.

Crile's physiological and surgical experiments led him to conclude that shock is "the result of exhaustion," and that one of the most vital phenomena accompanying shock is a low blood pressure and the impairment of the vaso-motor mechanism. Shock is most conspicuously diminished by morphine administered hypodermically and by local and regional anæsthesia. Careful handling, sharp dissection, and minimum trauma are also very effective in preventing shock. The preventive technique of shock—i.e., all the measures and methods available—is grouped under the term anoci-association. The ideal treatment for surgical shock is the direct transfusion of blood, but of course for the human subject this is not always available. Further researches showed that the brain cells, the suprarenals, and the liver give an excellent index to the degree of shock, whether from trauma, drugs, toxins, or anaphylactic and foreign proteins, and that these stimuli do not cause histological changes in any other organs. Very instructive and striking histological coloured illustrations are given to show the changes in the cells of the organs mentioned. Each shock-producing agency at first causes in the brain cells a hyperchromatic stage followed by a hypochromatic stage. Heavy morphine doses produce no especial changes in the organs mentioned. These changes do not appear to be due primarily to products of pathological metabolism or to altered gases in the blood, though these are secondary factors. Nor are the changes in the brain cells due to the inhalation anæsthetic *per se*, yet their extent is to a considerable degree determined by the anæsthetic which is used in a surgical operation. All these changes are less marked under nitrous-oxide-oxygen than under ether; the inference from the teaching is that the former should be the inhalation anæsthetic of choice.

The degree of shock is dependent upon the part of the body injured, and varies with the type of trauma inflicted. The severely depressing effects of stimulation of the distance ceptors, and the emotions, especially fear, are fully expounded. As to the treatment of shock, two important points must be borne in mind: (1) the prevention of further shock by the amelioration or elimination of conditions which produce it; and (2) the support of the circulation. The indications are:—Check hæmorrhage, blunt the susceptibilities, and quiet apprehension. Morphine for this purpose is "the surgeon's sheet-anchor." To mitigate the pre-operative dread and to facilitate the induction of anæsthesia, a solacing dose of morphine (1/6th gr.) and scopolamine (1/150th gr.) is given before the operation. In the choice of an anæsthetic, as the patient is the first consideration, every division of a sensitive tissue is preceded by the injection of novocain in 1 in 400 solution. To minimise post-operative discomfort, especially in abdominal operations, quinine and urea hydrochloride in a 1/6 to 1/2 per cent. solution is injected *at a distance* from the wound. There should be gentle manipulation and sharp dissection, and tissue trauma should be as slight as possible. Local anæsthesia is of the greatest importance. Most illuminating and thoroughly practical descriptions are given of the requisite anoci-associations in abdominal operations, operations on the gall-bladder, stomach, intestines, bladder (in this case the mucosa is anæsthetised by an injection of 5 per cent. solution of alypin), uterus, perineum, rectum, and kidney. Benign and malignant tumours are considered and the special conditions arising in Graves's disease and cerebral surgery. One chapter is devoted to the technique of administering nitrous-oxide-oxygen.

This suggestive monograph, which marks a most important advance in surgical technique, should be in the hands of every surgeon, and its principles should be tested in their application to different surgical operations. We congratulate Professor Crile and his coadjutors on their work.

A Text-book of the Practice of Medicine.

By JAMES M. ANDERS, M.D., Ph.D. Eleventh edition, illustrated. London and Philadelphia: W. B. Saunders Company. 1913. Pp. 1335. Price 24*s*. net.

The Practice of Medicine.

By JAMES TYSON, M.D., LL.D., and M. HOWARD FUSSELL, M.D. Sixth edition. With 6 plates and 179 illustrations. Philadelphia: P. Blakiston's Son and Co. 1914. Pp. 1211.

Modern Surgery, General and Operative.

By JOHN CHALMERS DACOSTA, M.D., LL.D., Samuel D. Gross Professor of Surgery, Jefferson Medical College, Philadelphia. Seventh edition, revised, enlarged, and reset. With 1085 illustrations, some of them in colours. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 1515. Price 25*s*. net.

THE ideal text-book of medicine has yet to be written. There are many books which treat of diseases in a systemic manner, and partition off, under definite headings, the various diseased states that are met with; but although these may be of use to the student who has to acquire a comprehensive survey of the whole field of medical practice, they fail to be of use to the practitioner who, at an early date, has forced upon him the fact that diseased states rarely conform to type.

We are inclined to think that modern text-books of medicine approach more and more to dictionaries rather than text-books, dictionaries which must perforce throw the greatest strain on the memory of the student, whereas we are almost sure that the thinking student and the observant practitioner would be better served by text-books in which the subjects were treated on broader lines, and, in fact, in which general principles were brought into play, so that they would have constantly put before them disease as the disturbance of physiological and anatomical states.

The two books on medicine before us are of the old type in which the diseases are systematised and in which no attempt at continuity of ideas is made. Both have run through many editions, so that little need be said in the way of review. Both have been favourably received by us on previous occasions, and in so far as they go we can only say again that they fulfil the object of the writers. They have been brought up to date by the addition of much recent work on medicine in all parts of the world. Professor Anders's book is perhaps a little fuller than the joint work of Dr. Tyson and Dr. Howard Fussell. He has added considerably to his useful tables of differential diagnosis, and gives many prescriptions which he has personally tried and found satisfactory. Both books will prove of great value and keep up their reputation for being standard text-books on medicine. And their limitations are those of all text-books that are written by individuals who cannot be personally responsible for the views on all the aspects of so illimitable a subject. There must be present in such works opinions on many subjects which are handed down from text-book to text-book; no isolated author feels brave enough to break the entail or to open up new ground. For instance, the erroneous idea of the etiological relationship between alcohol and hepatic cirrhosis should not appear without criticism. The important part played by B. coli and its allies in the production of disease and the interesting question of streptotrichoses deserve fuller treatment than they obtain. But it is easier to criticise than actually to suggest how a perfect medical text-book should be written, and we merely express the general feeling that text-books of medicine have their necessary limitations, which are sometimes unfortunate. But concerning these two special works under review, we can only repeat that they are exceedingly good examples of their type, and we reiterate the favourable opinions we expressed in our reviews of the earlier editions.

There is little fresh to say about the seventh edition of such a work as the text-book of modern surgery by Dr. DaCosta. The preceding editions were good and this issue is thoroughly representative of present-day surgery. But the more concrete nature of surgical teaching seems to remove the surgical text-book from some of the drawbacks which characterise the medical text-book.

In his preface the author explains the great difficulty of a writer of a text-book: he has to decide whether "an alleged discovery is a fragment of eternal truth or a nebulous emanation of chaos," and on the judgment of the author in this respect depends in great degree the real character of the book. The author appears to us to view surgery with an open mind, so that he has been able to decide wisely between the rival claims of recent additions to the science, and the whole work may be taken to represent the present state of surgery; yet he has found it possible to keep the book within a reasonable size.

There is another point which deserves mention; he has endeavoured to give the authority for every important statement, and when possible to use the author's words, believing that an author's description of his own work must be better than any description that could be written for him. These numerous references must prove very useful to the reader who wishes to investigate any subject more fully, and we agree that as a rule an author can describe his own work best, though the rule is not without exceptions, for a surgeon may have the power of devising a method and yet not possess the ability to describe the method so clearly that others may grasp it readily.

The work is probably the best general text-book of surgery emanating from the United States of America.

Practical Therapeutics, Including Materia Medica and Prescription Writing.

By DANIEL M. HOYT, M.D., Assistant Physician to the Philadelphia General Hospital. Second edition. London: H. Kimpton. 1914. Pp. 426. Price 21*s.* net.

THIS book is mostly headlines and spaces, with the baldest information under the headings. Under each drug is given a section on physiological action, one on the different preparations of that drug, and another on its therapeutic application; but no one would gather from this volume that opium was a more important drug than, say, camphor, or that the state of the pupils in opium poisoning was of any more importance than in poisoning by other drugs.

The volume is full of minor mistakes. It is true that in the United States a fluid pint contains only 16 ounces, but in a book intended apparently for use in this country the difference between the United States and the British measures should be made clear. The author makes much of the rules for prescribing, but his prescriptions show none of the meticulous care which specimen prescriptions in an elementary text-book should undoubtedly display. In teaching a student to prescribe he should be told to specify whether the ingredients of a prescription are to constitute a draught, a lotion, or a gargle, &c., and to send out a box of suppositories labelled "One at night," as the author's instruction runs, might with ignorant patients lead them to appreciate the flavour of oil of theobroma.

In a book of this elementary character the photographs of tracings of physiological experiments are quite out of place, excellent as they are in themselves, while the picture of a cardiographic apparatus on p. 32 shows nothing which would be comprehensible to one who had never seen such an apparatus. The best chapter is that on proprietary medicines and meat juices. Here the author writes with courage and knowledge.

1. *Bakteriologische Untersuchungen der Genitalsecrete der nichtschwangeren und nichtpuerperalen Frauen, &c.*

By Dr. MAUNU AF HEURLIN. Pp. 226. Price 12 marks.

2. *Bakteriologische Untersuchungen des Keimgehaltes im Genitalcanale der fiebernden Wöchnerinnen, &c.*

By Dr. MAUNU AF HEURLIN. Berlin: S. Karger. 1914. Pp. 616. Price 12 marks.

THESE two monographs by Dr. Heurlin embody the results of prolonged and painstaking researches into the bacterial flora of the female genital passages and the reaction of the vaginal secretion. The conclusions arrived at, briefly summarised, are that the vaginal secretion in young children is alkaline in reaction to litmus, but becomes acid about the time of puberty, and remains so in healthy subjects till the involution of the genital apparatus in advancing age, when it once more is alkaline. A temporary change to alkalinity may occur during the puerperium and last till the cessation of the lochia, and in disease, especially gonorrhœa, an alkaline condition is often present. On the other hand, the secretion of the cervix uteri is normally alkaline throughout life. The bacteria present in the vagina are originally derived from the intestine, and the type of flora encountered varies with the condition of the vaginal secretion. In young children Gram-positive cocci and facultative anaerobic streptococci predominate. With the acid secretion of healthy adult life the organisms found in greatest numbers are the different kinds of vaginal bacilli, of which the author distinguishes six varieties. He classifies the conditions of the vagina into four degrees of cleanliness according to the bacteria present, the least contaminated or first class showing a prevalence of vaginal bacilli in practically pure culture, the second class a mixture of these bacilli with comma variabile, the third the coexistence of the latter organism with streptococcus anaerobius carduus, and the fourth, or most contaminated, class presenting only this streptococcus and other anaerobic cocci, with few or no bacilli or commas. This last class comprises chiefly old women and young children in whom the alkaline secretion facilitates the growth of such organisms. The vaginal secretion of a healthy woman contains few leucocytes, but these cells increase in cases of abnormal uterine positions. Some of the anaerobic organisms found in the healthy vagina are identical with those found in febrile patients after parturition and are responsible for the pyrexial disturbance, gaining an opportunity for rapid multiplication at this time. Streptococcus pyogenes is not often, in the author's experience, responsible for this rise of temperature, nor has retention of membrane or rupture of the perineum any very constant connexion with the occurrence of a febrile state after labour.

A Manual of Dental Anatomy (Human and Comparative).

By CHARLES S. TOMES, LL.D., F.R.S., F.R.C.S. Eng. Seventh edition. With 299 illustrations. Edited by H. W. MARETT TIMS, M.A. Cantab., M.D. Edin., and A. HOPEWELL-SMITH, M.R.C.S. Eng., L.R.C.P. Lond., L.D.S. Eng. London: J. and A. Churchill. 1914. Pp. 616. Price 15*s.*

THE seventh edition of this well-known text-book has been brought out under the joint editorship of Dr. Marett Tims and Mr. Hopewell-Smith, and we may at the outset say that the editors have carried out their task in a most admirable manner. Tomes's "Dental Anatomy" is not only the recognised text-book for dental students, but it is also freely used by the student of general zoology. The requirements of these two classes of students are somewhat divergent, and with a view of meeting these requirements the editors have divided the book into two parts. The facts dealt with in Part I. are those more immediately demanding the attention of the dental student, while those in Part II. are of great importance to the student of comparative anatomy.

The account given of the dental tissues is admirable, and the various views on debatable points are placed before the readers in a clear and well-balanced way. Reference is made to the analysis of enamel carried out by Mr. Lovatt Evans, which shows that dried human enamel contains organic matter probably to the amount of 1 to 2 per cent. The chapter devoted to the naked-eye anatomy of the teeth still leaves much to be desired. It may be hoped that in future editions a fuller description and one better illustrated will be given.

Professor Fawcett's recent work on the development of the maxilla and mandible in man is clearly described, and several illustrations have been added to assist the description given in the text. In the part of the book devoted to comparative odontology the order in which the different groups are discussed has been brought into line with modern ideas. A welcome account is given of the teeth of prehistoric man, and as bearing upon this question we think it would be useful to extend the descriptions of the teeth of anthropoid apes and the monkeys. To each chapter a list of references has been added.

Technik der speziellen klinischen Untersuchungsmethoden.

By 12 writers. Edited by Professor Dr. T. BRUGSCH and Professor Dr. A. SCHITTENHELM. Part II. Berlin and Vienna: Urban und Schwarzenberg. 1914. Pp. xvi. + 523–1078. With 115 figures in the text, one coloured plate, and one table. Price, paper, 36 marks; bound 40 marks.

THE first part of this large text-book was reviewed in THE LANCET of May 23rd last. The second part is subdivided into six sections. In the first of these are considered the various methods of investigating the metabolism of human beings; in the second section a large number of special chemical methods—quantitative, qualitative, and biochemical—are described. The third section is devoted to various experimental methods used in the investigation of the many ferments or enzymes met with in the body. Next comes a brief account of the functional examination of the vegetative nervous system, and after that an exposition of the chief physico-chemical methods that are of service in medicine; an admirable account of colloid chemistry is given here, erring, perhaps, on the side of excessive brevity. Ten pages at the end of the text are devoted to bodily measurements and their normal figures, and the book ends with a satisfactory index. The editors are to be congratulated on the success with which they have laboured to produce a technical laboratory manual of reasonable size. It contains directions for the performance of tests and analyses in the greatest variety; the experimental methods are described briefly, and many of the directions and manipulations could only be understood and carried out by experts in the use of physical or chemical apparatus, but references to the literature are given and should suffice to fill in any lacunæ. One may sometimes be in doubt as to the value, in any clinical sense, of the results furnished by the tests or analyses described. Thus the importance of estimating the quantity of peroxidase in animal extracts or substances, or of measuring the viscosity of the blood, or of titrating the amount of trimethylamine in the urine, may not be immediately apparent to the physician, possibly because he lacks experience. But for those who have to carry out these and many other examinations of normal or pathological excretions and tissues, Brugsch and Schittenhelm's volumes are indispensable.

LIBRARY TABLE.

Studies from the Rockefeller Institute for Medical Research. Reprints. Volume XVIII. New York: The Rockefeller Institute. 1914. Pp. 596.—The contents of this volume consist of 27 papers on pathology and bacteriology, 4 papers on physiology and pharmacology, 5 papers on chemistry, 4 papers on experimental surgery, 9 papers on experimental biology, and 11 papers from the Hospital of the Rockefeller Institute. The first paper, the Huxley lecture, by Simon Flexner, on Some Problems in Infection and its Control, was published in THE LANCET of Nov. 9th, 1912. The greater portion of the remaining papers are from the *Journal of Experimental Medicine*, though several American and German medical, zoological, and other scientific journals are represented. We mention only a few of the subjects and select those bearing more especially on the practice of medicine. Peyton Rous, James B. Murphy, and W. H. Tytler, and Rous and Murphy later, treat of a filterable agent as a cause of osteochondrosarcoma; F. G. Novy, W. A. Perkins, and R. Chambers, of immunisation by Trypanosoma lewisi; Mary E. Morse, of complement fixation and the diphtheria group of organisms. The spleen and hæmolytic jaundice forms the subject of papers by R. M. Pearce, J. H. Austin, and J. H. Musser, jun., by H. T. Karsner and R. M. Pearce, and by R. M. Pearce and J. H. Austin. H. Noguchi has cultivated a new species, Treponema calligyrum, from human condylomata, and has studied spirochæta pallida in the central nervous system in progressive paralysis and tabes dorsalis. He also writes (with J. W. Moore) on Treponema pallidum in the brain in general paralysis. Poliomyelitis is the subject of studies by C. W. Howard and P. F. Clark (insect transmission), S. Flexner, P. F. Clark and F. R. Fraser (passive human carriage), and S. Flexner and H. Noguchi (cultivation of virus). S. Flexner gives the results in 1300 cases of serum treatment in epidemic meningitis. E. E. Butterfield and F. W. Peabody consider the action of the pneumococcus on blood, and Martha Wollstein and S. J. Meltzer the production of pneumonic lesions by intrabronchial insufflation of non-virulent pneumococci and the reaction of the lungs to intrabronchial insufflation of killed virulent pneumococci and of plain sterile bouillon. S. J. Meltzer gives simple devices for emergency artificial respiration. Alexis Carrel studies visceral organisms. F. H. McCrudden and H. L. Fales study infantilism with special reference to nitrogenous compounds and excessive calcium excretion in the fæces, intestinal absorption, and the cause of failure to develop (four papers). Francis W. Peabody studies inorganic metabolism in pneumonia. H. F. Swift reports absorption of arsenic following intramuscular injections of salvarsan and neosalvarsan. The various papers are reprinted in series and consecutively numbered, and there is a good index.

Photography in Colours: A Text-book for Amateurs and Students of Physics, with a Chapter on Kinematography in the Colours of Nature. By GEORGE LINDSAY JOHNSON, M.A., M.D., B.S. Cantab., F.R.C.S. Eng. With 13 full-page plates (5 in colour) and numerous illustrations in the text. London: George Routledge and Sons, Limited; New York: E. P. Dutton and Co. 1914. Pp. 243. Price 3*s.* 6*d.* net.—The first edition of this book was reviewed in THE LANCET of Feb. 18th, 1911. The second edition has been enlarged from 143 to 243 pages, largely by amplification of the descriptions of colour processes other than single-plate colour photography. A chapter has been added on the "uto-colour" process of printing in colour direct from colour photographs. The chapter on the nature of light, colour, and shadows deals, perforce inadequately in 28 pages, with such abstruse subjects as the wave and electro-magnetic theories of light, shadows, the colour of the sky, and so on. The book will be useful to those who wish to obtain an idea of the principles of colour photography and as an introduction to the practical application of the art.

Psychiatrische Vorträge für Aerzte, Erzieher, und Eltern. Dritte Serie. Von Professor Dr. G. ANTON, Direktor der Klinik für Nerven- und Geisteskranke in Halle. Berlin: S. Karger. 1914. Pp. 91. Price 2.40 marks.—Professor Anton continues his series of essays on psychiatrical subjects, intended for parents and teachers as well as for physicians. On this occasion we feel that the majority of the essays are concerned with such technical matters and couched in such technical language as surely to fail to appeal much to the former divisions of his audience. The paper on return of function in disease of the brain and cord is interesting and instructive. It deals with the question of the vicarious functioning of one part of the brain for another, the whole matter of compensation, and the relation between development and function; it will repay perusal in the original. Another essay is entitled "Gehirnbau und Seelenkunde," and is concerned with the interrelation of cerebral structure and psychical function. The facts of cerebral pathology are utilised to exemplify the changes in the psyche consecutive to lesions in various of the lobes of the cerebrum. An article on the inner associations between thinking and speaking is also worth notice. Other papers are entitled "Gefährliche Menschentypen" and "Geistige Artung und Rechte der Frauen." In the latter Professor Anton states that physically and psychically woman is of a different type from man; her organism has different limits and obeys different laws, but he declares that the champions of the women's movement have overridden the limits imposed by nature.

A Short Handbook of Cosmetics, by Dr. MAX JOSEPH, of Berlin (London: Heinemann. 1914. Pp. 97. Price 2*s.* 6*d.* net), has reached its second English edition. This little volume deals with those conditions which as a rule come under the notice of the dermatologist rather than of the general practitioner. It contains answers to questions frequently put by the public, and if the doctor considers these subjects beneath the dignity of science, the patient will seek the advice of less competent and unqualified practitioners. In the right hands Dr. Joseph's book should prove exceedingly useful.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, R. HUTCHISON, A. E. GARROD, H. D. ROLLESTON, and W. HALE WHITE. Vol. VIII., No. 29. October, 1914. Oxford: at the Clarendon Press. London, Edinburgh, New York, Toronto, and Melbourne: Humphrey Milford. Subscription 25*s.* per annum; single numbers 8*s.* 6*d.* net each.—The contents of this number are: 1. A Clinical and Pathological Study of the Heart in Diphtheria, by William E. Hume and S. J. Clegg. The forms of arrhythmia observed in cases of diphtheria have been submitted to systematic study with the polygraph and some interesting results have been obtained. It is asserted that any form of arrhythmia except sinus arrhythmia occurring in diphtheria indicates that the heart muscle or its nerves are involved in a pathological process, and it is urged that special precautions are necessary to keep the patient recumbent. The paper is illustrated by two interesting plates. 2. The Effects of Anæmia upon the Pathological Processes Occurring in Acute Ulcer of the Stomach, by C. Bolton. From clinical and experimental observations it would appear that the anæmia induced by direct loss of blood has no influence as an isolated factor in facilitating the production of a gastric ulcer and none in causing its extension, nor does it prevent its healing. Two interesting plates accompany this paper. 3. Conduction in the Auricles, by A. E. Naish. A case of acute heart block is recorded with tracings which seem to admit only of the explanation that the cardiac impulse spreads to the ventricle and to the auricle by different paths, and does not pass to the ventricle through the auricle as hitherto supposed. 4. Observations on Inspiratory Diminution of the Pulse (Pulsus Paradoxus), by A. W. Falconer and James M. McQueen. Some interesting observations are recorded upon two healthy adult males who presented this condition. The authors bring forward evidence which tends to show that this alteration of the pulse in their cases followed on oval deformation of the third part of the subclavian artery due to muscular action involved in putting back the shoulders. They review the opinions which have been expressed as to the explanation of this condition when it occurs in other than healthy subjects, in which the one common factor appears to be an embarrassment of the circulation, and they suggest that the normal inspiratory diminution of blood pressure exaggerated by an abnormally low blood pressure is a sufficient explanation. 5. Pathological Changes in the Adrenal Glands, by T. R. Elliott. As a result of a large series of observations it is stated that there is no proof that the store of adrenalin in the medulla of the glands is increased in any disease. It is lessened in many infective diseases, and markedly so in cases of afebrile acute cardiac failure associated with mental distress in the struggle to live. The lipoid of the cortex is stored and lost under conditions entirely different from those which govern the other fats of the body. It does not disappear in emaciation but vanishes with great rapidity in acute febrile affections. Three good coloured plates are attached to this paper. 6. The Tonicity of the Abdominal Muscles in Enteric Fever, by Adam Patrick. Observations were made on the state of the abdominal muscles in a series of 55 male cases admitted to hospital with enteric fever. More or less generalised superficial resistance was found in 19 cases at some stage of the disease, usually early. Resistance was observed in a horizontal band in 14 cases. In 11 of these 33 cases there was no resistance in the right hypochondrium, but this was observed in 32 of the whole series of cases. It is suggested that the superficial resistance is connected in some way with the ulceration of the intestine.

The Indian Journal of Medical Research. Vol. II., No. 1.—This is an exceptionally interesting and instructive number of the journal, which at all times contains material of the highest scientific and practical value contributed by the officers of the Indian Medical Service. The issue before us comprises 16 original articles, and extends to more than 400 pages of printed matter, along with some 60 plates, many of which are coloured. In a short preliminary editorial the fact is mentioned, among other things, that Dr. R. Row, of Bombay, has succeeded in obtaining a culture of Leishmania donovani from the peripheral blood of a kala-azar patient.—Major E. D. W. Greig, I.M.S., who has been on special duty in connexion with the recent official cholera inquiry, furnishes two articles, the first of which deals with the invasion of the tissues by the cholera organism, with further observations on pneumonia in cholera cases. It gives details of the complete bacteriological examination of the organs of some patients made shortly after death had occurred. In the second paper, which is illustrated by a number of plates, Major Greig describes the lesions of the gall-bladder and biliary passages in cholera, giving a bacteriological, histological, and experimental study of the subject. In discussing the mode of entry of the cholera bacillus into the biliary tracts he states that this probably occurs in more ways than one. In some instances it enters from the intestinal tract, and the fact that the lesions have been traced to the point of entrance of the common bile duct into the duodenum seems to indicate this possibility. It has been shown, too, that the comma bacillus passes from the intestinal canal to the lymphatic glands and thence is distributed to the various organs. The cholera vibrios may also reach the liver and bile through the lymph channels. Up to the present Major Greig has not been able to cultivate the cholera organism from the circulating blood during life, so that it appears that the lymph channel plays a more important part than the blood stream in the distribution of the vibrios in cholera cases. Major Greig's study goes some way to supply a scientific explanation of the mechanism of the production of cholera carriers.—Captain Hugh W. Acton and Captain R. Knowles, directors of the Pasteur Institute of India, have been engaged in testing experimentally the efficacy of a number of remedies against snake bites, and in a contribution entitled "Studies on the Treatment of Snake Bite," divided into three parts and extending to 100 pages of the journal, they discuss the relative virulence of various snake venoms. The common cobra is regarded by them as the most poisonous snake in India. The value of certain remedial measures is considered, such as ligature, artificial respiration, compression of the bitten limb, excision of the bitten area, amputation, &c. The relative value of well-known local remedies is also discussed, including potassium permanganate, iodine trichloride, and gold chloride.—In another article dealing with this subject Surgeon-General W. B. Bannerman reports on the treatment of snake bite with potassium permanganate, giving details of a series of animal experiments.—Two papers are contributed by Major R. McCarrison on the subject of goitre,[1] the first relating to the pathogenesis of experimentally produced goitre and the second describing some experimental researches on the etiology of the endemic form of the disease. Both of these articles are illustrated by numerous plates. The same investigator adds a contribution to the study of experimental beri-beri.—Major S. P. James gives an interesting summary of a year's mosquito work in Colombo, and Captain Clifford A. Gill, chief malarial medical officer in the Punjab, describes an epidemic of fulminant malaria, together with a preliminary study of the part played by immunity in malaria.—Major A. C. McGilchrist furnishes the first part of a report on the Cinchona Derivatives Inquiry, showing the results of experiments with cinchonidine, quinine, cinchonine, and quinidine. In a second communication the same expert describes some further experiments on animals with other derivatives of cinchona, including ethyl-hydro-cupreine-hydrochloride, hydro-quinine-hydrochloride, and quinine hydrochloride.—The occurrence of stegomyia maculosa in Madras, together with some observations on its habits, is the title of a contribution by Captain W. S. Patton, who also supplies a short article on the behaviour of the parasite of Indian kala-azar in the dog-flea, ctenocephalus felis (Bouché), with some remarks on canine kala-azar and its relation to the human disease.—The classification of bacteria for the purposes of water analysis is discussed by Major J. W. Cornwall, of the Pasteur Institute of Southern India, and Major F. Percival Mackie gives a note on the parasite of bat malaria; he also furnishes a paper on a flagellate infection of sand-flies. The bursate nematodes from the Indian elephant are described, with many illustrative plates, by Major Clayton Lane. From this brief summary it will be seen that the contents of this number are particularly interesting.

ASYLUM REPORTS.

Kingseat Mental Hospital, Aberdeen (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 592, the average daily number being 467. The direct admissions amounted to 110. Among the predisposing causes of insanity it was ascertained that 30 were hereditarily predisposed to nervous or mental affections, and that 22 had suffered from one or more previous attacks. The discharges during the year numbered 50, with a percentage of 27·2 of recoveries on the total admissions. This recovery rate was 10 per cent. lower than last year, and the decrease was due to the large number of incurable cases admitted. The majority of the patients discharged recovered suffered from the various forms of manic-depressive insanity. The deaths numbered 66, an increase of 12 over last year. Twenty-one of the patients who died were over 70 years of age. The chief causes of death were valvular disease of the heart, general paralysis, senile asthenia and exhaustion following attacks of manic-depressive insanity. There is at present no patient confined to bed with pulmonary tuberculosis, and no patient with that disease in an acute form. Dr. H. de M. Alexander, the medical superintendent, remarks that the adoption of the new villa type of asylum gives increased facilities for granting parole, and that this is its most valuable asset. Some patients who were discontented and perpetually railing against the supposed illegality of their detention have, on being granted parole, become contented and loyally disposed towards those whom previously they regarded with feelings of distrust and antagonism.

Northumberland County Lunatic Asylum, Morpeth (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 1028, the average daily number on the register being 793. The number of direct admissions was 233 and of discharges 116. The recovery rate was 34·78 per cent. calculated on the total admissions. The deaths amounted to 111, making a percentage on the average number resident of 11·58 for the males and 17·42 for the females. This rate, especially for the women, must be regarded as high. Of the 111 deaths, 15 are attributed to general paralysis, 11 to epilepsy and other forms of brain disease, 12 to exhaustion from mania or melancholia, 29 to phthisis and other tuberculous diseases, 6 to colitis, and 16 to senile decay. Seventeen of the persons who died were 70 years of age or upwards. As illustrating the unfavourable nature of the cases sent here for treatment it may be noted that 13 died within the first month and 14 during the second month following admission. The death-rate from phthisis amounted to over 26 per cent. Dr. T. W. McDowall, the medical superintendent, calls attention to the fact that the asylum continues to be inconveniently crowded, and he considers that the want of adequate space for the sick and infirm is a cause of disease. He also speaks with great earnestness of the necessity of awakening interest in scientific research as to the cause and treatment of mental disease. Years of neglect of these higher views as to the care of the insane and the administration of asylums has brought the medical department of this work into bad repute with the medical profession, and at the present time it is almost impossible to get intelligent, keen young professional men to enter the service. Dr. McDowall urges the committee of the asylum to appoint a small subcommittee for investigation of this matter.

County Borough of West Ham Lunatic Asylum (*Annual Report for the Year 1913*).—The total number of cases under treatment during the year was 1234, the average daily number on the register being 973. Out of the 233 direct admissions, 61 cases had a hereditary history of insanity, epilepsy, alcoholism, or other neurosis, giving a percentage of 26. In 37 cases the existence of a greater or less degree of alcoholic intemperance was obtained, and mental stress in 11 cases. The other principal exciting causes were senility in 13 cases and puberty in 5 instances. Fifty-one cases were discharged recovered, giving a percentage of 21·8 on the direct admissions, and a percentage of 4·13 on the total number under treatment. Mr. L. F. Hanbury, the medical superintendent, points out that the comparatively low recovery rate is due firstly to the very hopeless class of patient usually admitted on the male side, and secondly to the fact that the standard of recovery is a high one. There were 117 deaths, giving a percentage of 9·49 on the average number resident—15·45 for males and 8·7 for females. General paralysis was the most frequent cause of death, occurring in 25·6 per cent. of the cases. Senile decay accounted for 20·5 per cent. Post-mortem examination was held in 87 per cent. of the deaths. Two patients died from dysentery, and in 11 cases tuberculosis of the lungs was regarded as either a primary or secondary cause of death. The provision of an open-air verandah on the male side has proved of great assistance both in the isolation and treatment of this disease, and similar benefit will doubtless be obtained from the one on the female side recently completed. The asylum continues to be greatly overcrowded.

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[1] See THE LANCET, March 21st (p. 817) and April 4th (p. 975), 1914.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 14, 1914.

The Lister Institute and the Medical Research Committee.

Nothing less than the future of the Lister Institute will be the subject of a discussion between the Members of the Institute on Wednesday next, Nov. 18th. The question at issue is whether the Institute should be presented to the nation, temporarily and on a trust basis, to be the headquarters of national medical research, amalgamating for that purpose with the National Medical Research Committee set up under the National Insurance Act, and the answer to the question is one which the Members will necessarily have difficulty in finding. Perhaps they will be able to take comfort from the fact that as they are strongly recommended by influential persons to take both courses neither course can be without its distinct merits.

The steps which have led up to the present critical position are as follows. About two years ago the National Health Insurance Commissioners decided to institute in London, under powers provided by the Act, a Central Institute of Medical Research. This being known, the Governing Body of the Lister Institute in March last recommended to the Members of the Institute that, provided they had the legal power, they should offer to the nation, under conditions to be considered, the whole organisation and resources of the Lister Institute as the nucleus of the new department of medical research. The recommendation was based upon information readily supplied by the Medical Research Committee, appointed under the Act, and was accompanied with provisions: "(1) that representation on the executive committee of the national scheme should adequately safeguard the interests of the Lister Institute; (2) that suitable employment for the large majority of the present staff should be provided; and (3) that details of the programme and of the budget of the national scheme should command the approval of the Governing Body (of the Institute)." That Governing Body was, moreover, advised that the Members in carrying out such a recommendation would be within their legal rights, while Viscount Iveagh, who in virtue of his magnificent contribution to the endowment of the Institute enjoys the right to veto any disposal of the Institute to which he might object, approved the recommendation, making one of the five with seats on the Governing Body who voted in its support. There was one dissentient vote and one abstainer. The copy of the resolution, thus arrived at, having been forwarded to the Medical Research Committee through Lord Moulton of Bank, chairman of that committee, whose sympathy had already been enlisted, subcommittees from each body were appointed to consider, without prejudice to the future action of either, whether amalgamation would be feasible and acceptable. The two committees drew up a scheme, embodying the terms of amalgamation which they were prepared to recommend to their respective authorities as satisfying the stipulations of both sides. The proposed scheme of amalgamation provided for the representation of the present Governing Body of the Lister Institute on the Medical Research Committee, for employment of the present staff of the Lister Institute and the maintenance of its name, and set out in detail the disposition of the combined research staffs, with suggestions for adjustment of salaries. The prospective budget showed that the amount to be contributed towards the new Central Institute from medical research funds would be £19,000, at any rate for the next two years, but, Lord Iveagh having generously offered to build upon the land adjacent to the Institute at Chelsea a Research Hospital of 50 beds, the upkeep of this institution would entail later an annual additional expenditure of not less than £5000.

This scheme of amalgamation was considered on July 17th of this year at a full meeting of the Governing Body of the Institute, and at the close of the sitting a resolution was moved and carried on a vote of five (Sir Henry Roscoe, Viscount Iveagh, Mr. J. Luard Pattisson, Professor E. H. Starling, and Sir William Osler) against two (Sir John Rose Bradford and Sir David Bruce) approving of amalgamation. At the same meeting the honorary treasurer of the Institute, Mr. Pattisson, was instructed to seek an interview with the Treasury as to the terms on which the funds and property of the Institute could be offered to the nation. That interview was held on July 27th, when the terms, provisionally agreed to, proposed to place the property of the Institute in the hands of three official trustees as an endowment of capital for the benefit of national medical research, the income to be regularly set to the credit of the Research Fund. The trustees were to have the power to realise and reinvest any of the funded investments in their trust, subject to the approval of the Minister of State in charge of the Insurance Act, and if such a course should be recommended by the Medical Research Committee: they could also realise any land or buildings in their trust, the realisations being placed to the credit of the trust, and being available for reinvestment in land, buildings, or other securities. With the approval of the Medical Research Committee and the responsible Minister they would also be empowered to use any portion of the funds in their hands for capital expenditure. The suggested clauses governing the custody of the funds of the Institute further allowed for cancelling the trust in the event of the Government diminishing its contribution to the Medical Research Fund or ceasing wholly to utilise the Institute or its endowment for medical research. In these contingencies the trustees, in consultation with the Royal Society and with Viscount IVEAGH or his successor in the title for the time being, would submit for the approval of a legal court a new scheme for appropriating the property to the furtherance of medical research. Provision for the maintenance of the work of the serum farm at Elstree was made, and the last clause would terminate the Trust in 20 years by handing over unconditionally to the Government for the purposes of national medical research the whole of the property included in the Trust.

On the passing of the resolution approving the scheme for amalgamation Sir JOHN ROSE BRADFORD, the chairman of the Governing Body of the Lister Institute, resigned his chairmanship and seat on the Governing Body, and he has stated publicly that he regarded the proposal, involving as it did the cessation of the activities of independent organisation and the centralising of pathological research under Parliamentary control, to be prejudicial to the interests of scientific research.[1] He has received whole-hearted support in his action from distinguished men of science working in various branches of research, while the majority on the Governing Body have put forth an able and frank statement controverting his view, which cannot fail to command close attention. The issue is with the Members, who have to decide whether they will uphold with the necessary proportion of votes the recommendation of their Governing Body, which also has the approval of Dr. C. J. MARTIN, the Director under whose superintendence the Institute has risen, as is claimed in the statement of the Governing Body, almost to the status of a national institute for medical research. Of the force of the arguments on either side there can be no doubt. The projected national scheme for medical research has very much the same programme and same ideals as the Lister Institute, and it is believed that coöperation would prevent overlapping and prove economical. The Lister Institute, moreover, would gain by amalgamation that access to hospital practice which some of their Members miss. On the other hand, the arguments for keeping the Institute free from Government control are not without force. Scientific research is largely concerned in the discoveries of rules, but a Government department might be tempted to lay down rules for discoveries—which would be fatal. We would prefer to see the Lister Institute preserve its independence; we believe that there is ample scope for the energies of both bodies working separately. But we are bound to admit that those who take the opposite side in the controversy have forcible arguments behind them, notably the argument of expediency. And expediency must be reckoned with.

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The National Council for Combating Venereal Diseases.

IT was considered, and most wisely, by the organisers of the movement for constituting a National Council for Combating Venereal Diseases, that the present position of the country, in the grip of a terrible war, should not be a bar to their energies. We agree wholly with their resolve to continue the work which they had begun, finding, indeed, that the existing national situation is one that particularly calls for the combating of venereal diseases.

The objects of the new body, which definitely came into existence at an inaugural meeting held on Wednesday last, are wide and simple. The National Council will aim, firstly, at giving the public accurate and enlightened information as to the prevalence of these diseases. Here they will find a public curiously divided into two camps—namely, first, those who appear to know nothing of the matter or to be indifferent to its importance; and, secondly, those who have been terrified by false or misunderstood evidence into believing that every other person in the streets, and most of the children who are born, are the victims of syphilis. It will be difficult work at the outset to arouse interest on one side and to allay unnecessary apprehension on the other, and the lessons that will have to be read to the public will need careful consideration. The necessity for early treatment is a point which the National Council will put in the front of their teaching, and as a corollary they will strive to promote greater facilities for the treatment of these diseases than now exist, and wider opportunities for medical practitioners to study them. It is notorious that, under the ill-management and prudery which still have power among us, the treatment of venereal diseases has been unsatisfactory in many respects, and even the knowledge of a large number of medical men has been desultory or acquired only by a disproportionate amount of pains, owing to the conditions not having become familiar to them in the ordinary course of a hospital training. The setting right of these matters the National Council are placing in the front of their programme, and by attempting also to disseminate a sound knowledge of the laws of life they are going to the root of the matter. For physiological ignorance is at the bottom of much of the prevalence and spread of venereal diseases. This it is, every whit as much as any feeling of shame, which sends the victim to a quack; devoid of the least knowledge of the significance of his symptoms he is willing to believe any audacious lie which he may read in an advertisement or any stupid counsel he may receive from an equally credulous friend. Physiological ignorance again allows the terrible results of latent infection to wreak themselves upon women and children, and still more strikingly is it apparent in the malignant teaching, once so common, that chastity is in most cases impossible and in many cases harmful.

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[1] Brit. Med. Jour., August 1st, 1914, p. 265.

Following upon a wide spread of information to the public it will become possible for the National Council to promote such social and legislative reforms as are relative to the aims and objects of the movement. Here the National Council will attempt to coöperate with existing associations so that much excellent but disconnected effort may be utilised in a coöperative manner. For example, the Liverpool Medical Institution about a year ago appointed a committee to consider the best means of combating venereal diseases, and this committee recommended that educational methods should be adopted in very much the manner that the National Council desire. Dr. CHARLES J. MACALISTER, the chairman of the committee, has written an admirable pamphlet for distribution to the public, which might well receive gratuitous circulation, while Dr. R. W. MACKENNA has added a warning to soldiers which is, in our opinion, extremely timely. "You are going," says the note to soldiers, "to fight in order that your children and your children's children may enjoy the heritage of liberty. See to it that no action of yours will rob them of a heritage that is as priceless as liberty—the heritage of good health." As the prevalence of venereal disease among the recruits has been referred to in our columns, we take this opportunity of saying that in many directions we have heard that the conditions have greatly improved.

Annotations.

"Ne quid nimis."

THE FUTURE OF MEDICINE.

REFORM in the methods of medical education seems to be everywhere in the air. In an address at the Jubilee of the Medical School of Melbourne University Dr. James W. Barrett, C.M.G., dealt with the problem particularly as it affects Australia. In the course of his remarks he made some observations of a general character. He pointed out that two great problems dominate the future of medicine: (1) clinical research; and (2) organisation of preventive medicine. With regard to the first, he suggested that the problem of pathology is the problem of medicine and *vice versâ*, and that investigations in both pursuits had better be undertaken by a man who is both a pathologist and a physician. It is the separation of what is called "pure science" from its human context that constitutes a fault. Our conception of the term science needs amending. Medicine and surgery are not the application of science to practical problems, but are divisions of science in themselves—that is to say, that from the study of phenomena principles can be inferred. Dr. Barrett advocates, more or less, the plan of the Johns Hopkins University, championed in this country by Professor E. H. Starling and Sir William Osler, that in the future in every great hospital there must be a physician and a surgeon devoting themselves entirely to the study of medicine and medical education, and relieved from the necessity for private practice. He considers it not undesirable that even the professors of physiology and anatomy should be permitted to do a certain amount of hospital clinical work, which would familiarise them with the necessary sense of the nature of the problem to be faced daily, and offer a continuous inducement to the professor to mould the teaching of his subject in accordance with practical suggestion. Some of the methods of chemistry, he thinks, could be taught equally well if the problems submitted to examination were those connected with the human body, healthy or diseased. The professors would thus be stimulated to devote their leisure to research more directly connected with the work of the physician and the surgeon. Dr. Barrett advocates the creation of an organised system of preventive medicine which shall include all the present scattered sanitary agencies, beginning with the school medical work and taking charge of the public health in all its ramifications. A Central Board of Health, he urges, should be instituted, to include one or two representative medical men, in addition to the chairman, an engineer, an architect, and perhaps one or two municipal representatives. The functions of such a board would be the general development of preventive medicine, the control of the medical health officers, and the establishment of by-laws and general regulations. No scheme of preventive medicine can be efficient unless the coöperation of the medical profession is secured, and that can only be effected by asking them to take a hand. Such a board would have to consider questions of town planning, housing, rural settlement and food-supplies, smoke abatement, and all those problems which are concerned in the consideration of a more complete and better enjoyment of life. It seems clear that medicine is passing more and more from its traditional individualistic standpoint and becoming increasingly corporate in its aims. In the not distant future there may be a general movement on the lines indicated by Dr. Barrett.

CAMBRIDGE UNIVERSITY AND THE BELGIAN UNIVERSITIES.

BELGIUM, a national martyr, has surely deserved well of this country especially, in every capacity of life. Great Britain has done well, but not one whit better than it were shame not to have done, in making it a national responsibility to take charge of those unfortunate expatriates who have suffered so terribly in behalf of Europe and herself. But besides food, clothing, and shelter for the body, the mind of the race must not be allowed to starve, and in this respect the University of Cambridge has extended a helping hand in offering sanctuary in her ancient academic halls to the expatriated professors and students of the Flemish universities. It was hoped that Louvain University would be able to transfer her corporate and official existence to Cambridge for the period of her exile; but as that proved impossible, steps have been taken for the formation of unofficial courses under Flemish professors to protect the students from the demoralising and dangerous consequences of enforced idleness—courses that shall afford systematic instruction on the lines of the

Belgian universities in accordance with the individual requirements of refugee students, so far as is possible with a necessarily incomplete Belgian teaching staff. The faculties of philosophy and letters and also those of law and engineering are fairly well represented by several Belgian professors and students. Those of medicine and science are at present less adequate, but they are constantly growing. Eleven Belgian professors (of whom only one, Professor Van Gehuchten, with his interne, Dr. Arian, represents the faculty of medicine) are at present established in Cambridge, and three more are known to be coming, and it is hoped by their aid to organise teaching in the respective faculties, for which no fees will be charged. Facilities will also be afforded for those students with an adequate knowledge of English to attend the ordinary courses at the University, while classes for teaching English are at work and will be further extended as required. A hospitality committee, of which the secretary is Mrs. Verrall, at the Bureau de Renseignement, Trumpington-street, Cambridge, has been organised to assist those unable to meet the moderate charges of from 15*s.* to £1 a week for board and lodgings; but to be eligible for such assistance and for the free courses the students must submit themselves to a medical examination before the proper Belgian authorities and obtain a certificate that they are physically unfit for military service or have been rejected by the Belgian authorities for other reasons, while students of Belgian universities from foreign (neutral) countries must of course bear their own charges for maintenance. All applications should be made to Mr. J. T. Shepherd, King's College; or to Mr. E. Bullough, Caius College, Cambridge. It is earnestly to be hoped that in this way this country may be able in some degree to mitigate the effects of the vandalism wrought by our foes on true culture.

TRAUMATIC ENDOCARDITIS.

IT is well known that in severe injuries of the chest, such as are due to blows, falls, or crushing, rupture of the heart or pericardium or of the valves may occur, immediately producing symptoms. But it is not so well known that cardiac symptoms may be slight or absent, and develop later in consequence of endocarditis following the injury. In the *Boston Medical and Surgical Journal* of Oct. 1st Dr. S. G. Weber has reported the following case. On Dec. 24th, 1908, a strong boy, aged 16 years, was riding in a wagon with which an electric car collided. He remained unconscious for half an hour. He was bruised on the left side of the trunk, left arm, and left leg. He complained of pain in the head, shoulder, and back, and could not lie on the left side. Attacks of giddiness and faintness occurred three or four times a day for the first week, and these continued for six weeks, during which the breathing was difficult. About ten days after the accident he was taken to the Massachusetts General Hospital, where examination with the X rays showed separation of the upper epiphysis of the left humerus. Dr. Weber saw him on Feb. 9th, 1909, when he complained chiefly of pain in the back and left arm. There was tenderness above the left clavicle, over the cervical plexus and over the sixth to the eighth dorsal vertebræ. The heart sounds and area of dulness were normal. He was not seen again until September, 1912, when he was working as a teamster. He was a tall, fleshy, strong-looking man, but he could not lift heavy weights, and if he tried to he felt pain in the lower dorsal region. He could not run so well as before the accident and soon got out of breath. There was a loud systolic souffle over the whole præcordium, loudest at the edge of the sternum opposite the fourth rib. The impulse was in the seventh intercostal space, about half an inch to the right of the nipple. There was slight œdema of the legs. An explanation of the development of endocarditis some time after an injury is furnished by those cases of injury causing early death from lesions other than cardiac, in which slight lesions in the heart are found to be originating inflammatory changes. Riedinger mentions as one of these lesions small ecchymoses within the heart which may lead to changes in the valves similar to valvular lesions arising from other causes. He reports the case of a woman, aged 54 years, who fell from a third storey into the street and died three days later. There were fractures of the lumbar vertebræ and occiput. The endocardium showed a thin exudation and was infiltrated with blood. The points of insertion of the chordæ tendineæ into the mitral valve were swollen. Under the endocardium were many small hæmorrhages and spots of inflammatory infitration. Bernstein has collected and analysed 126 cases in which cardiac symptoms followed an injury. In 85 they appeared immediately, in 22 after a month, in 6 after a year, and in 9 after more than a year. The less severe injuries of the heart are slight lacerations of the muscle or ecchymoses into its substance or just beneath the endocardium. Any symptoms produced may soon disappear. But slow valvular changes may follow and be recognisable only after a longer or shorter time. Such slight cardiac injuries have been overlooked or ignored as causes of valvular disease.

NATHAN SMITH.

Nathan Smith,[1] though his name is little known in this country except to students of medical history, is one of the most important figures in the history of American medicine, especially as regards its educational side. He was the founder of the medical school of Dartmouth, New Hampshire, in 1798, the practical founder of the Yale Medical School in 1813, and the inaugurator (in conjunction with President Allen, of Bowdoin College, Brunswick, Maine) of the Medical College in connexion with Bowdoin, endowed by the Legislature of Maine in 1820. Finally, about 1821, in collaboration with his son Nathan Ryno Smith, he established the Medical School of the University of Vermont. Thus, with the addition of Harvard, five of the six New England States were provided with medical schools, and Nathan Smith's own opinion was that "every State should have one medical school and no more." Nathan Smith was a descendant of one of the old Puritan families who landed from the *Diligent* in New England in 1638. Among the settlers was a Mr. Henry Smith, who in process of time became Nathan Smith's great-great-grandfather. Henry Smith came from Hargham Hall, Norfolk, and so was presumably a country squire of the day. John Smith, Nathan's father, occupied himself in farming at Chester, Vt., and here Nathan passed his early days. He received his medical education from a well-known medical man in the same state, by name Goodhue, and studied with him from the age of 22 till 25, when in 1787 he set up on his own account. Most of the story of his life and work is told in his own words as given in his letters, and the interest of the book is much increased by the illustrations. Of Smith's medical writings the most notable are the Essay on Typhus (i.e., Typhoid) Fever and Observations on the Pathology and Treatment of Necrosis. His letters are delightful reading on account of their simple earnestness and desire for knowledge, and the whole book is well worth study.

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[1] The Life and Letters of Nathan Smith, edited by Emily Smith. New Haven, Yale University Press; London, Humphrey Milford; Oxford University Press. 1914. Pp. 185. Price 10*s.* net.

THE CEREBRO-SPINAL FLUID IN ACUTE NEPHRITIS IN CHILDREN.

THE study of the cerebro-spinal fluid has at the present day acquired a paramount importance in pathology, due, in a large measure, to the numerous and interesting observations made on children who are without doubt the most fitting subjects for investigation, both from their proneness to disease of the central nervous system and from the ease with which lumbar puncture can be performed on them. In recent years this study has broadened its horizon in the fact that its importance is no longer limited to cases of affections of the nervous centres, but has extended also to morbid conditions not localised in them, and more especially at the present time to cases of renal lesions, with uræmia, acetonæmia, and azotæmia. From the fact that with regard to some substances, such as urea, for example, the cerebro-spinal fluid reflects more or less exactly the state of the blood serum, there being a parallelism between the amount contained in both these fluids, the utility of conducting investigations preferably on the cerebro-spinal fluid becomes evident. Professor L. M. Spolverini, of the University of Rome, estimates the presence of abnormally large quantities of urea, 1 to 4 per 1000 instead of 0·5 or 0·6 per 1000, as an indisputable index of a process of azotæmia, while a smaller amount excludes it absolutely. Authorities are not agreed as to the figures. Systematic researches in acute renal inflammation in children have hitherto been scanty, but Professor Spolverini gives in a recent issue of *Il Policlinico* the result of his investigations on four children, from 3 to 5 years old, two of whom had acute hæmorrhagic nephritis associated with angina, one an acute nephritis with malaria, and the fourth an acute nephritis of unknown origin. Lumbar puncture was practised in each on an average five to six times at intervals of three to four days, commencing from the second day of their admittance to the clinic. The fluid drawn off was found markedly increased in quantity, on an average 20–25 c.c. each time, and was under considerable tension. The amount was visibly diminished as the patient improved, but still remained rather excessive even after cure was established, as shown by examination of the urine. With regard to the quantity of urea in the cerebro-spinal fluid it was found to be increased in all the cases. Moreover, diminution in the amount was found to coincide with the clinical and anatomo-physiological improvement of the kidneys, and increase was noticed whenever retrogression was observed by examination of the urine. After recovery the quantity fell to 0·5 or 0·6 per 1000. The amount of chlorides remained constant both in the acute stage and after recovery, oscillating between the limits of 7·3 and 7·5 per 1000. Estimation of the amount of albumin gave similar results and was maintained within normal limits. Although the utility of these observations is limited on the one hand to the presence and degree of cerebro-spinal hyperidrosis and on the other to the determination of urea, it is evident that it may constitute an important element, both diagnostic and prognostic, especially when compared with the clinical course and with examination of the urine. It has been suggested by Nobécourt and others that when the amount of urea reaches 3 per 1000 the life of the patient is in imminent danger. Lumbar puncture, moreover, offers certain therapeutic advantages, and Professor Spolverini's experience is that the withdrawal of cerebro-spinal fluid in patients with nephritis not only shortens and modifies in a favourable way the further development of the disease, but must be considered an efficacious method of eliminating the nervous phenomena of uræmia, both by decompression of the cerebro-spinal column and by removing from the organism, and especially from the central nervous system, a highly toxic fluid. This result is observable by the fact that the characteristic headache of the patients disappears after lumbar puncture, and the same may be said of the coma and convulsions which contribute so materially in raising, especially in children, the rate of mortality.

THE ULTIMATE RESULTS OF SANATORIUM TREATMENT IN TUBERCULOSIS.

AT a meeting of the Medical Society of Copenhagen Professor Bang read a paper, freely illustrated by statistics, on the results of sanatorium treatment estimated many years after the patient's discharge. His paper, and the long discussion which followed, have been reported in *Hospitalstidende*. The many tables and statistical analyses displayed by Professor Bang provoked a lively discussion as to the merits of statistics in the estimation of sanatorium results, and he admitted that a detailed knowledge of each case is necessary for the judgment of sanatorium results by the standard of figures. One striking feature of his paper was the good prognosis which his figures indicated for working-class patients admitted to a sanatorium in the second and third stages of the disease. It has long been held that the prognosis in pulmonary tuberculosis is best in the first stage of the disease, and declines as the second and third stages are reached. Indeed, this view is so generally regarded as a truism that its accuracy has scarcely been questioned. That it does not embrace the whole truth is shown by Professor Bang, whose figures are obtained from several sanatoriums in Denmark, where, perhaps more than in any other country, sanatorium treatment has been thoroughly tested. The relative numbers of patients discharged "symptom-free" from sanatoriums do, indeed, fall with the stages of the disease; but when the fate of all the patients is investigated several years later many of the "symptom-free" are found to have relapsed, while patients discharged unimproved in the second and third stages of the disease are often found to have regained their capacity for work. Professor Bang showed that only two-thirds of the patients in the first stage, discharged as "symptom-free," were fit for work several years later. On the other hand, the number of patients in the second stage, discharged as "symptom-free," had actually been augmented several years later, their ranks being increased by one-third by patients who, though discharged as unfit for work in the second stage of the disease, had ultimately regained their capacity for work. This paradoxical result is even more striking in the third stage of the disease. The explanation of this phenomenon is to be found in the faultiness of the present classification of the disease according to its extent, but not according to its virulence, to the patient's power of resistance, and to many other factors. In many cases patients are classed in the second or third stages, although on admission to a sanatorium the disease is practically quiescent. Professor Bang suggests that the present tendency to favour patients in the first stage of the disease in preference to patients in the other stages when sanatorium accommodation is limited may not be always wise. Though the patients in the latter stages have hitherto been regarded as incurable and treated with scant attention, he urges that they should in the future be regarded more hopefully and given the chance of sanatorium treatment, even though this be only for a short time. His observation that patients often relapse who are discharged from a sanatorium with the disease arrested in its first stage, whereas others often recover who are discharged unimproved in the second stage, is not at first sight flattering to sanatorium treatment. His estimate of the value of the present methods of classification of the disease is also depreciatory, and, as one speaker during the discussion cannily suggested, the most reliable classification would be the following: (1) patients that recover, and (2) those that do not.

CONGENITAL PYLORIC STENOSIS.

Mr. A. J. Walton[1] recently had an opportunity of observing the condition of the pylorus post mortem, seven months after a completely successful operation, gastro-enterostomy, had been performed for this defect. Such an opportunity cannot often occur. Since the date of operation and up to a short time before death, due to epidemic diarrhœa, health was excellent; it might have been expected, therefore, that the pylorus would have to some extent resumed its normal form. This, however, was not the case. It formed a tumour-like mass, three-quarters of an inch in length. Section showed an enormous hypertrophy of the muscular coats and the mucosa was thrown into folds. It was impervious to the passage of water. Such an observation throws some doubt upon the view which regards congenital hypertrophic stenosis as essentially congenital, but is in favour of the condition being due to a primary spasm, which later is followed by pure hypertrophy of the muscle coat. A symptom which supports this view and which is characteristic of the condition is that the child at birth can retain its food; vomiting usually begins only when the maternal milk is changed, such alteration inducing by irritation the primary spasm. Treatment may be medical or surgical, and there are supporters to be found in both camps. Statistics are curiously variable as to the relative merits. Dr. G. F. Still reports 19 recoveries out of 36 cases treated medically. Four continental writers record between them 66 recoveries out of 71 cases similarly treated. On the contrary, Mr. Walton's personal experience gives startling figures for the physician: 18 died out of 19 cases (all hospital cases). Surgically the figures on the whole present successes in about an equal proportion to medically treated cases. The conclusion is suggested that medical treatment should be tried first. As to length of time Mr. Walton thinks for a space of two weeks only if the child still continues to lose weight, or three weeks if holding its own. Then surgical intervention should be indicated. Of medical treatment careful diet and lavage are the main features. Surgically, pyloroplasty or gastro-enterostomy is the best measure. The writer favours the latter method.

TREATMENT FOR NOCTURNAL ENURESIS.

Dr. Cahier has reported the results of a new form of treatment he has devised for nocturnal enuresis; it is applicable to either children or adults. He injects physiological salt solution at a rapid rate directly into the perineum, on each side of the median raphe. The quantity for an adult he places at from 80 to 100 c.c. on each side; for children 40 to 60 c.c. The skin must not be stretched unduly. The immediate result of the procedure, which is stated to be entirely harmless and comparatively simple, is to form a huge blister, and it is upon the effect of this on the nerve terminals in its vicinity that the curative value depends. The tension in the region when the desire for micturition occurs suffices to awaken the patient and aids in breaking the habit and re-establishing control. This method Dr. Cahier has tried upon 30 cases in the last eight years. In 18 there followed a complete cure after a single injection; in 6 a second or third injection was required; while in 6 no benefit was realised. By a similar method of treatment in children, Ganléjac reports 75 cures out of 150—half the number. Such results appear favourable and should warrant a further and more extensive trial.

IN connexion with the discussion on Surgical Experiences of the Present War, to be introduced by Sir Watson Cheyne, at the Medical Society of London on Monday next, Nov. 16th, at 8.30 P.M., the following have signified their intention of taking part: Sir Frederic Eve, Mr. Arthur Edmunds, Mr. R. P. Rowlands, Mr. D'Arcy Power, Mr. Charters Symonds, Dr. Dennis Embleton, and Dr. Ironside Bruce.

Surgeon-Major-General Sir John By Cole Reade, K.C.B., the Crimean veteran whose death at the age of 82 occurred recently in London, was the oldest of the Honorary Surgeons to the King. Some details of his distinguished career are given in our Service columns this week.

WE much regret to announce the death on Sunday last of Mr. Charles Barrett Lockwood, consulting surgeon to St. Bartholomew's Hospital, and a member of the Council of the Royal College of Surgeons of England.

THE PANAMA PACIFIC INTERNATIONAL EXPOSITION AT SAN FRANCISCO.—We referred to this exposition in THE LANCET of July 11th, p. 103. We now learn from the commission that notwithstanding any rumours of a postponement on account of the European war the exposition will be opened on the date previously announced—viz., Feb. 20th, 1915. The amount of money to be spent on the exposition has been carefully estimated at $56,500,000, "too vast a sum to be tied up and allowed to remain idle." The promoters expect every success to attend the project.

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[1] Annals of Surgery, 1914, September, p. 342.

THE OCCURRENCE OF ACUTE EMPHYSEMATOUS GANGRENE (MALIGNANT ŒDEMA) IN WOUNDS RECEIVED IN THE WAR.

BY R. H. JOCELYN SWAN, M.S. LOND., F.R.C.S. ENG.;
ISAAC JONES, M.D. MELB.,
TEMPORARY LIEUTENANT, ROYAL ARMY MEDICAL CORPS; AND
J. W. McNEE, M.B., CH.B. GLASG.,
LIEUTENANT, ROYAL ARMY MEDICAL CORPS (SPECIAL RESERVE).
(*Attached to the Royal Herbert Hospital, Woolwich.*)

WE desire to place on record at once the following three cases of acute emphysematous gangrene which have occurred among the wounded sent home from the front. We do so in order to draw attention to the condition and to warn other surgeons in order that similar cases may be recognised and isolated at once from patients requiring surgical dressings. Although acute emphysematous gangrene was common in the pre-Listerian era, it has become a rarity since the introduction of antiseptic surgery.

Since the commencement of the war some 2000 cases have been admitted to the Royal Herbert Hospital, but the disease has only appeared in the last fortnight. Two of the cases were recognised immediately at the reception of the convoy, but the third case had been two days in hospital before the condition became manifest. The condition is, of course, unlikely to occur in moderately clean wounds, as the causal organism, being an anaerobe, develops better in the presence of other pyogenic organisms.

Diagnosis.

The three cases described below are all similar in the fact that in smears from the discharge spore-bearing organisms were found identical morphologically with the bacillus of malignant œdema. The spore-bearing bacillus did not grow aerobically, but was obtained in deep stab cultures in glucose agar from two of the cases. In the second case, in which amputation was performed, sloughing of the flaps occurred within 12 hours, and in the discharge the same spore-bearing bacillus was found present in almost pure culture. It was unfortunately impossible to carry out animal inoculations from any of the cases. The diagnosis of "malignant œdema" in these cases rests, however, as much on the clinical appearance as on the above bacteriological findings.

A description of the three cases is given briefly below, but emphasis may be given here to some of the important clinical points on which the diagnosis chiefly depends. These may be briefly summarised as follows: (1) The blackish-brown, almost charred appearance of the wound. (2) The abundance of a thin, brown-coloured serous discharge, in which microscopically much granular débris but comparatively few pus cells could be recognised. Great numbers of other pathogenic organisms were present in all three cases in addition to the spore-bearing bacilli. (3) The curious heavy, penetrating odour from the wound. (4) The skin surrounding the wound became of a slate-blue colour. Blisters containing brownish fluid were present over the area of dark skin in the case in which the gangrene had spread. (5) Fine emphysematous crepitations could be made out in the tissues surrounding the wound. (6) Marked toxæmia accompanied the disease in the two fatal cases, but it is noteworthy that in both of these consciousness was unimpaired until a minute or two before death.

Notes of Cases.

CASE 1.—Lieutenant H., wounded in the right thigh on Oct. 26th by a bullet fired at a range of five yards. The bullet entered the thigh posteriorly and to the outer side just above the knee, and passing out on the inner side of the thigh obliquely caused a wound about 8 inches in length. Wounded at 2 A.M., the patient was obliged to lie in the trenches until after midday, when he was carried in an old and dirty farm cart to the field hospital. He arrived at Woolwich on Oct. 29th looking pale and ill, with a temperature of 103·6° F. The wound on the inside of the thigh presented the appearance of a bayonet thrust, being 8 inches long and 3 inches broad at its widest part. It passed deeply into the muscles of the thigh and was very foul.

The patient was given an anæsthetic at once, and the whole wound was thoroughly opened. The cavity was swabbed out with hydrogen peroxide and then with solution of iodine, and afterwards a large fomentation was applied. On Oct. 31st he appeared much better, but at 11 P.M., when the wound was being dressed, it was noticed that the outer edge was slightly discoloured, and the surface of the wound had assumed a dark, charred appearance. His general condition grew rapidly worse; he had profuse sweatings, and became collapsed. At 6 A.M. on Nov. 1st the wound was quite black in colour, and discharging an enormous amount of thin brownish fluid. The thick dressings were soaked through by the abundance of the discharge. The outer and upper third of the thigh became livid and then dark blue in colour, and the epidermis became raised in places into blisters containing also a thin brownish fluid. Fine crepitations could now be felt in the tissues surrounding the wound.

The fluid discharge from the wound on examination was found to contain few pus cells and enormous numbers of organisms, including a spore-bearing bacillus identical morphologically with the bacillus of malignant œdema. The appearance of the wound and the characters of the discharge had completely altered in eight hours. The emphysematous process increased, and the patient died at 12.15 P.M.

CASE 2.—Belgian soldier, F. T., admitted on Nov. 2nd, 1914. He was wounded on Oct. 28th while scrambling out of a trench before the advancing Germans, and fell back into the trench. The bullet entered behind the right knee and came out in front. He was made prisoner, and lay for 26 hours in the trench before the French re-took the position, after which his wound was dressed for the first time. The wound was again dressed on the following day (Oct. 30th), but not again until admission to hospital at Woolwich. He was found to have a severe wound below and behind the right knee, shattering the head of the tibia and opening the knee-joint. The wound was lacerated, black in colour, and from it there exuded a thin dark-brown coloured fluid. Swelling and definite emphysema were present in the tissues surrounding the wound. The patient's general condition was bad. A bacteriological examination of the fluid made immediately after admission showed pus cells to be scanty and a considerable amount of granular débris. Organisms of many kinds were present, and also very numerous spore-bearing bacilli, identical morphologically with the bacillus of malignant œdema.

The patient was at once removed to an isolation ward, and the limb was amputated through the upper third of the thigh (Lieutenant Jones). The flaps were swabbed freely with hydrogen peroxide, and free drainage established in the stump. Within 12 hours, however, sloughing of the flaps set in, and in films from the discharge the spore-bearing bacillus was found. The organism was grown in glucose agar stabs in almost pure culture. The patient's general condition became worse, death occurring six days after the operation.

CASE 3.—Belgian soldier, F. L., admitted on Nov. 2nd, in the same convoy as Case 2. He was wounded on Oct. 28th by a rifle bullet fired from a range of 10 metres. He had 60 cartridges in his right trousers pocket, and states 15 of them exploded on being struck by the bullet. After being wounded the patient lay in the trenches for 24 hours a prisoner of the Germans, and was not dressed until 30 hours after his wound, when the French again occupied the position. Eighteen hours later he was again dressed at Calais.

Immediately after admission smears were made from the thin discharge from the wound and spore-bearing bacilli found to be present. The spores were central and the organisms identical morphologically with those of malignant œdema. There was, however, no local gangrene round the wound, but slight emphysema around the larger wound. The patient's general condition was quite good, and he was at once isolated. It was decided to treat the case by incising the area very freely, and this was done at once. Numerous small fragments of cartridge casing were taken out of the wound, which was well swabbed with hydrogen peroxide and potassium permanganate solution. The result has been good, and the patient is so far doing very well. His pulse and temperature are now normal, and his wound is becoming covered with healthy granulations.

Treatment.

Remarks on prophylactic treatment are here unnecessary, but it will be noticed that in each of the three cases the patients had in the exigencies of circumstances to remain lying in the trenches untreated for many hours. With the occurrence of the disease active measures must be adopted as soon as the bacteriological evidence is forthcoming, first to isolate the patient from other surgical cases and then to attack the wound. In the first case the condition was hopeless from the onset of the spreading gangrene, and in the second amputation well above the wound was performed at once owing to the extensive injury to the knee-joint. In the third case the patient's general condition was such that it was decided to attempt in the first place to save the limb, especially as any operation would have to be performed through infected tissue. When it can be carried out, free and extensive incisions into the area with thorough swabbing with peroxide of hydrogen and permanganate solution should be used, and we are inclined to recommend this in preference to pure carbolic acid, as we are dealing with anaerobic organisms. In our two cases dressings soaked with hydrogen peroxide were applied very frequently. At the same time large quantities of saline should be given by the rectum and by subcutaneous infusion.

"THE LANCET" HYGIENIC TESTS FOR GAS FIRES.

IT seems to be agreed in the practical gas-fire industry that the requirements which we have laid down in regard to the escape of combustion products from the gas fire into the room should be complied with. If it were not so there would not have been so many applications to us to apply the hygienic test to new models of fires, and it seems certain that the test has been very generally adopted. At all events it is rarely now that the models sent to us show any defect in this respect, and we have little doubt that the fires are submitted to the test by the makers themselves at the factory before they reach us. The present winter season therefore opens well with a supply of gas fires which have passed a test of hygienic efficiency. We are sure that the establishment of this standard will do much to make this convenient means of domestic heating popular.

Another series of gas fires was recently submitted to us for testing purposes by the Parkinson Stove Company, Limited, of 129, High Holborn, W.C. The description of the models was as follows: No. 1950 Congreve, No. 1931 Ratcliffe, No. 1933 Ratcliffe, No. 1942 Edmund, No. 1721 Pathan, and No. 1732 Spartan. These were all well designed and attractively finished fires, and not one of them showed the slightest escape of combustion products either when tested in the open, unattached to a chimney, or when unprovided with a flue or elbow. We regard these fires, therefore, as satisfactory from the hygienic point of view.

We have also received from the Davis Gas Stove Company, Limited, of Luton, and 60, Oxford-street, London, W., four types of their new barless gas fires named as follows: Apollo, Venus, Neptune, and Cupid. These all bear evidence of careful construction specially directed to securing hygienic conditions of working. These makers introduced the hygienic test known as the shadowgraph test, so that they took the initiative in excluding gas fires which did not satisfy this test. In other words, they commenced the movement for condemning gas fires which allowed combustion products to escape into the room. Under these circumstances it seemed superfluous to test their own models. However, it is interesting to record that THE LANCET hygienic test was found to confirm the findings of the shadowgraph test, the standard which they adopted. There was no leakage of combustion products from these gas fires even when unaided by an elbow or lengths of flue-pipe. The complete passage of the combustion products through the flue nozzle was demonstrated, and the process is automatic. The firm is much to be congratulated on its pioneer work.

MEDICAL MAYORS.—The following members of the medical profession have been elected or re-elected to the mayoral chair:—Mr. S. Hale Puckle, M.B., Ch.M. Edin. (Bishops Castle), re-elected; Mr. S. R Alexander, M.D. Lond. (Faversham), re-elected; Mr. John Gordon Gordon-Munn, M.D., C.M. Edin., F.R.S.E. (Norwich), Lord Mayor; Mr. R. Jones Evans, M.R.C.S. Eng., L.R.C.P. Lond. (Pwllheli), re-elected; and Mr. J. Parkinson Atkinson, M.D. Glasg. (Saffron Walden), re-elected. It may be noted that the Lord Mayor of Norwich is the first medical man to occupy that high municipal office, though Sir Peter Eade was mayor of that city and county in 1893.

A MAHARAJA AND HIS MEDICAL ATTENDANT.—At Mussoorie recently a rather curious action was tried in which certain arrangements made by a Maharaja in his will for medical attendance upon his surviving family formed the subject of dispute. The Maharaja had by his will directed that certain arrangements for medical attendance upon his family made by him with Colonel Rennie, R.A.M.C., should be continued after his death and directed, his executors "after the departure of Colonel Rennie from Mussoorie to make a similar arrangement with the successor in his business if recommended by him and approved by my said executors, and failing that with the civil surgeon for the time being of Mussoorie." Colonel Rennie disposed of his practice to Dr. G. T. Wrench, the plaintiff in the action, before going to England, and recommended him to the executors of the Maharaja, who had died a short time before, but the executors appointed the civil surgeon, Major Hutchinson, I.M.S., to attend the family of the deceased. The plaintiff contended that they were obliged to appoint him unless they could show a good reason for not doing so, and brought his action to obtain enforcement of the clause in the will. For the defence it was pleaded that the services of Colonel Rennie had been dispensed with before the Maharaja's death, but the court found upon the construction of certain letters and the other facts proved that Colonel Rennie was the medical attendant of the testator's family, if not of himself, at the time of his death. The court, however, held that the direction to the executors to appoint Colonel Rennie's successor subject to their approval did not amount to more than a recommendation, and that they need not give reasons if in their discretion they preferred to do otherwise or call the plaintiff before them and give him a hearing. On this ground the plaintiff's suit was dismissed with costs.

THE SERVICES.

Royal Naval Division.

The following appointment has been made on the Divisional Staff: Fleet-Surgeon Arthur Gaskell, Royal Navy, to be Assistant Director of Medical Services (dated Sept. 22nd).

Royal Navy Medical Service.

The undermentioned Staff-Surgeons have been promoted to the rank of Fleet-Surgeon in His Majesty's Fleet:—Dated Nov. 8th: John Boyan, William Henry Daw, Hugh Leigh Norris, Adrien Andrew Forrester, John Stoddart, James Aquilon Forrest, Warren Guy Westcott, Francis John Louis Philip McKenna, Fairman Rackham Mann, William Wallace Keir, Edward Charles Sawdy, Percy Hooper Bannister, Richard Sidney Osborne, Edward Oliver Bamford Carbery, John Kimber Raymond, and Henry Rule Gardner.

The undermentioned have been appointed Surgeons for temporary service in His Majesty's Fleet:—Herbert McMaster, Bevington S. Jones, Cecil William Fletcher Greenhill, John Douglas James Bruce, Walter Croker Poole White, Thomas Smith Harrison, Edwin Lawrence Sturdee, Gomer Williams, Harold Garrett Chaplin, Frederick Lancelot Duckworth, Frank Winter Lawson, Strangeman Davis Kilner, and William Graeme Robertson.

The following appointments have been notified:—Fleet-Surgeon: E. C. Ward to the *Victory*, additional. Temporary Surgeons: B. A. Playne, lent to the *Pembroke*, temporary; H. G. Chaplin and F. L. Duckworth to the *Victory;* F. W. Lawson, S. D. Kilner, and W. G. Robertson, all to the *Pembroke*, additional, for disposal; J. D. J. Bruce, C. W. F. Greenhill, and W. C. P. White to the *Victory*, additional, for Haslar Hospital; T. S. Harrison and E. L. Sturdee to the *Pembroke*, additional, for Chatham Hospital; and G. Williams to the *Vivid*, additional, for Plymouth Hospital.

Royal Naval Reserve.

Surgeon: C. S. Brewer, R.N.V.R., to the *Eagle.*

Army Medical Service.

Supernumerary Surgeon-General Sir David Bruce, C.B., is restored to the establishment (dated Nov. 1st).

Royal Army Medical Corps.

Supernumerary Major Sir Edward S. Worthington, M.V.O., is restored to the establishment (dated Oct. 15th).

The undermentioned are granted temporarily the honorary rank of Lieutenant-Colonel:—Dated Oct. 30th: Major H. R. Kenwood, Royal Army Medical Corps, Territorial Force, and John Robertson. Dated Nov. 5th: Lieutenant Arthur Stanley Woodwark.

Lieutenant James R. Hill, from the Reserve of Officers, to be Captain.

Joseph Dalrymple to be temporary Captain (dated Oct. 15th).

The undermentioned to be temporary Lieutenants:—Dated Sept. 23rd: William Parry Morgan. Dated Oct. 9th: Douglas Gordon Cheyne. Dated Oct. 10th: Francis Frederick Brown, Thomas William Ramsden Strode, James Aubrey Torrens, Thomas Alfred Peel, Edgar Alan Pearson, William John Nisbet, Michael John Murray, Newton Matthews, and Ernest William Adcock. Dated Oct. 14th: Magnus Ross Mackay. Dated Oct. 19th: John Edmund Cox, Herbert Thomas Retallack-Moloney, Arthur Frank Palmer, Percy John Chissell, and Cecil Hallworth Treadgold. Dated Oct. 20th: Claude Kingston. Dated Oct. 21st: Daniel Boylan, William Herbert Brown, Joseph Henry Campain, Gerald Cock, Victor Lindley Connolly, David Horace Collingham, Walter James Ignatius Dwyer, Sydney Herbert Gibson, John Charles Boileau Grant, Alexander Keith Hamilton, James Gilkison Higgins, Douglas Frederick Kennard, Charles Joseph Kelly, Thomas Jones Latham, Charles Gordon Holland Moore, Albert Guy Miller, Albert John McClure Chesney Morrison, Alexander Thomson McWhirter, Frederick George Norbury, John William O'Farrell, Patrick Joseph O'Reilly, John Alexander Pringle, Edmund George Chambers Price, David William Reid, Thomas Thomson Rankin, Percy Charles Raiment, John Torrance Weir Stewart, Alexander Stephen, Garnet Wolsley Twigg, Ronald Joseph Tennant Thornhill, Charles Henry Thompson, Henry Ashbourne Treadgold, George Hector Urquhart, Alfred William Weston, William Miller Will, John Joseph Walsh, Richard Williams, and William Stuart Milne. Dated Nov. 1st: Claude Gray Colyer, Horace Charles Colyer, Stanley Alfred Ridett, Charles Weller, Frederick William Broderick, and George Gilbert Timpson.

The undermentioned are granted temporary rank as follows whilst serving with the Red Cross Hospital, Netley:—Temporary Majors: Dated Oct. 27th: C. H. Miller and C. Wallace. Temporary Captains: Dated Oct. 27th: C. Christopherson, J. L. Dickie, J. A. Hayward, C. Hitch, H. L. Tidy, and A. C. Hudson. Temporary Lieutenants: Dated Oct. 27th: W. Anderson, M. S. Esler, J. G. Ferguson, C. Gibson, J. D. Lyle, J. F. Mackay, L. E. C. Norbury, and C. Pearson.

Special Reserve of Officers.

Royal Army Medical Corps.

The undermentioned Lieutenants to be Captains:—John Henry Bell, John Phethean Charnock, Harold Fitz Vallacott, and John James McIntosh Shaw.

The undermentioned Lieutenants are confirmed in their rank:—Maurice A. O'Callaghan, William Fotheringham, Archibald W. Russell, George A. Bridge, Archibald J. Gilchrist, Eric K. Ryan, John W. Cannon, Charles A. McGuire, Herbert M. Pope, William T. Quinlan, Edward B. Marsh, James McCusker, Leonard J. Sheil, William F. Wood, Adiel E. H. Reid, and Verner Wiley.

Supplementary to Regular Units or Corps.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank:—Alexander Keith Robb and Thomas Clifford Owen.

The undermentioned to be Lieutenants (on probation):—Henry Alcock, John Kennedy, and Thomas Fuller Kennedy.

Territorial Force.

Royal Army Medical Corps.

2nd South Midland Mounted Brigade Field Ambulance: George Augustus Auden to be Lieutenant.

South-Eastern Mounted Brigade Field Ambulance: Captain Frederick B. Treves to be Major.

1st East Anglian Field Ambulance: To be Lieutenants: Alfred Errol Delgado and James Llewellyn Montfort Symns.

3rd East Anglian Field Ambulance: William Thomson Crawford to be Lieutenant.

1st Home Counties Field Ambulance: Arthur Maude to be Lieutenant. John Samuel Hudson to be Captain (temporary).

1st West Lancashire Field Ambulance: Lieutenant Harold Seddon, from Attached to Units other than Medical Units, to be Lieutenant.

1st Wessex Field Ambulance: Lieutenant Alfred J. H. Iles, from the Wessex Clearing Hospital, to be Lieutenant.

3rd Southern General Hospital: Captain Henry M. Clarke is seconded.

Eastern Mounted Brigade Field Ambulance: Basil Fawssett to be Lieutenant.

1st London (City of London) Field Ambulance: Archibald Leitch to be Lieutenant.

3rd London (City of London) Field Ambulance: Kenneth Vickerman Smith to be Lieutenant.

3rd Highland Field Ambulance: The undermentioned to be Lieutenants: Frederick Charles Chandler and George MacLeod Levack.

4th London Field Ambulance: Lionel Glover Pearson to be Lieutenant.

2nd South Midland Field Ambulance: Lieutenant-Colonel Seymour G. Barling, from the South Midland Clearing Hospital, to be Lieutenant-Colonel. Captain Alfred A. Hingston, from Attached to Units other than Medical Units, to be Major.

3rd Welsh Field Ambulance: Lieutenant-Colonel Arthur Lloyd Jones resigns his commission and is granted permission to retain his rank and to wear the prescribed uniform.

3rd Wessex Field Ambulance: Charles Henry Maskew to be Lieutenant.

1st London (City of London) Sanitary Company: Captain Joseph Grounds to be Major (temporary). Lieutenant Evelyn C. Sprawson to be Captain (temporary). Lieutenant Arthur T. Pitts to be Captain (temporary).

Attached to Units other than Medical Units.—Captain William A. Malcolm to be Major. To be Lieutenants: Arthur Scott Turner (late Lieutenant, 2nd Volunteer Battalion, The East Surrey Regiment), Robert George McDonald Ladell, and Cadet Arthur Henry Pemberton, from the London University Contingent, Senior Division, Officers Training Corps.

Deaths in the Services.

Surgeon-Major-General Sir John By Cole Reade, K.C.B. (A.M.S., retired), at Coleherne-road, Earl's Court, recently, in his 83rd year. He entered the Army Medical Department in 1854, and reached the rank of surgeon-general in 1888. He was present at the battles of Alma and Inkerman, and at the assaults on Redan and the siege of Sebastopol, where he was wounded (medal with three clasps and the Turkish medal), and he also served in the Indian Mutiny, being present at the siege and capture of Lucknow. In the Afghan war (1878–80) he was present at the entry into Kandahar (mentioned in despatches). For several years he acted as assistant to the Director-General of the Army Medical Department. He was appointed Honorary Surgeon to Queen Victoria in 1895, and was awarded the Jubilee Medal in 1897 and the Coronation Medals in 1902 and 1911. In 1892 he was granted the reward for distinguished and meritorious service. Sir John Reade, who retired in 1893, was the oldest honorary surgeon to the King.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8457 births and 4664 deaths were registered during the week ended Saturday, Nov. 7th. The annual rate of mortality in these towns, which had been 13·4, 13·8, and 13·5 per 1000 in the three preceding weeks, declined in the week under notice to 13·4 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 13·6, against 14·1 per 1000 in the metropolis. Among the several towns the death-rate last week ranged from 4·4 in Southend-on-Sea, 5·1 in Gloucester, 5·6 in Eastbourne, 5·7 in East Ham, 6·0 in Exeter, to 18·9 in Salford, 20·1 in Gateshead, 20·2 in Merthyr Tydfil, 21·1 in Liverpool, and 23·1 in Dudley.

The 4664 deaths from all causes were 44 fewer than the number in the previous week, and included 497 which were referred to the principal epidemic diseases, against 540 and 472 in the two preceding weeks. Of these 497 deaths, 169 resulted from infantile diarrhœal diseases, 146 from measles, 93 from diphtheria, 38 from whooping-cough, 34 from scarlet fever, and 17 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was 1·4 per 1000, and was equal to the rate in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had steadily declined from 1223 to 204 in the seven preceding weeks, further fell to 169 last week, and included 49 in London, 16 in Liverpool, 11 in Birmingham, 10 in Manchester, and 6 in Sheffield. The deaths referred to measles, which had been 67, 101, and 123 in the three preceding weeks, further rose to 146 last week, and caused the highest annual death-rate of 1·2 in Liverpool and in Leeds, 1·3 in Preston, 1·4 in Plymouth, 1·7 in Oldham, 2·0 in Wakefield, 2·7 in Grimsby, 3·2 in Newcastle-on-Tyne, and 3·4 in Wigan. The fatal cases of diphtheria, which had been 59, 79, and 61 in the three preceding weeks, rose to 93 last week, of which 24 occurred in London, 10 in Birmingham, 5 in Wakefield, and 3 each in Walthamstow, Portsmouth, Bristol, and Middlesbrough. The deaths attributed to whooping-cough, which had declined from 50 to 32 in the five preceding weeks, rose to 38 last week, and included 6 in London, 4 in Newcastle-on-Tyne, 3 each in Leeds and Rhondda, and 2 each in Liverpool and Burnley. The deaths referred to scarlet fever, which had been 29, 37, and 38 in the three preceding weeks, fell to 34 last week, of which 6 were registered in London, 3 in Liverpool, and 2 each in Dudley, Salford, and Newport (Mon.). The fatal cases of enteric fever, which had been 14, 19, and 14 in the three preceding weeks, rose to 17 last week, and included 3 each in London and Hull, and 2 in Leeds.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 3071 to 4683 in the 11 preceding weeks, had further risen to 4769 on Saturday last; 690 new cases were admitted during the week, against 650, 657, and 598 in the three preceding weeks. These hospitals also contained on Saturday last 1525 cases of diphtheria, 74 of enteric fever, 57 of whooping-cough, and 55 of measles, but not one of small-pox. The 1202 deaths from all causes in London were 22 fewer than the number in the previous week, and corresponded to an annual death-rate of 13·9 per 1000. The deaths referred to diseases of the respiratory system, which had increased from 110 to 197 in the seven preceding weeks, fell to 193 in the week under notice, and were 14 below the number registered in the corresponding week of last year.

Of the 4664 deaths from all causes in the 97 towns, 213 resulted from different forms of violence and 369 were the subject of coroners' inquests, while 1444 occurred in public institutions. The causes of 28, or 0·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Sheffield, Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, and in 76 other smaller towns. Of the 28 uncertified causes of death, 9 were registered in Liverpool, 5 in Birmingham, and 2 each in Preston and Tynemouth.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1140 births and 696 deaths were registered during the week ended Saturday, Nov. 7th. The annual rate of mortality in these towns, which had been 14·7, 15·0, and 14·6 per 1000 in the three preceding weeks, rose to 15·8 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 15·2, against 13·6 per 1000 in the 97 large English towns. Among the several towns the death-rate last week ranged from 8·1 in Hamilton, 10·1 in Motherwell, and 11·7 in Clydebank, to 18·7 in Greenock, 19·0 in Leith, and 20·0 in Aberdeen.

The 696 deaths from all causes were 56 in excess of the number in the previous week, and included 79 which were referred to the principal epidemic diseases, against numbers declining from 96 to 78 in the four preceding weeks. Of these 79 deaths, 24 resulted from infantile diarrhœal diseases, 18 from diphtheria, 17 from scarlet fever, 12 from whooping-cough, 5 from measles, and 3 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·8, against 1·4 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 29, 31, and 26 in the three preceding weeks, further declined to 24 last week, of which 13 were registered in Glasgow, 3 in Dundee, and 3 in Aberdeen. The deaths referred to diphtheria, which had been 19, 19, and 16 in the three preceding weeks, rose to 18 last week, and included 7 in Aberdeen, 4 in Glasgow, and 2 in Edinburgh. The fatal cases of scarlet fever, which had been 16, 16, and 14 in the three preceding weeks, rose to 17 last week, of which 7 occurred in Glasgow and 7 in Aberdeen. The deaths attributed to whooping-cough, which had been 10, 9, and 14 in the three preceding weeks, fell to 12 last week, and included 9 in Glasgow. The 5 deaths referred to measles were all recorded in Glasgow, and were slightly in excess of the average in recent weeks. The fatal cases of enteric fever occurred in Dundee, Perth, and Coatbridge.

The deaths referred to diseases of the respiratory system, which had steadily increased from 62 to 92 in the seven preceding weeks, further rose to 104 in the week under notice; 30 deaths were attributed to different forms of violence, against numbers declining from 29 to 17 in the three preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 597 births and 420 deaths were registered during the week ended Saturday, Nov. 7th. The annual rate of mortality in these towns, which had been 16·2, 15·8, and 15·2 per 1000 in the three preceding weeks, rose to 18·2 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 16·2, against corresponding rates of 13·6 and 15·2 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 18·0 in Dublin (against 13·9 in London and 16·3 in Glasgow), 19·2 in Belfast, 19·7 in Cork, 14·0 in Londonderry, 17·6 in Limerick, and 36·1 in Waterford, while in the 21 smaller towns the mean death-rate was 14·7 per 1000.

The 420 deaths from all causes were 68 in excess of the number in the previous week, and included 48 which were referred to the principal epidemic diseases, against 44 and 51 in the two preceding weeks. Of these 48 deaths, 21 resulted from infantile diarrhœal diseases, 11 from measles, 6 from scarlet fever, 6 from whooping-cough, 3 from enteric fever, and 1 from diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·1, against corresponding rates of 1·4 and 1·8 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily declined from 74 to 19 in the seven preceding weeks, rose to 21 last week, and included 10 in Dublin and 9 in Belfast. The deaths referred to measles, which had been 7 in each of the three preceding weeks, rose to 11 last weeks, and comprised 10 in Belfast and 1 in Cork. The fatal cases of scarlet fever, which had been 7, 5, and 12 in the three preceding weeks, fell to 6 last week, of which 5 occurred in Waterford and 1 in Belfast. The deaths attributed to whooping-cough, which had been 3, 9. and 4 in the three preceding weeks, rose to 6 last week, and comprised 3 in Belfast, 2 in Cork, and 1 in Dublin. The 3 deaths referred to enteric fever, of which 2 occurred in Dublin and 1 in Belfast, were equal to the average in the three preceding weeks. The fatal case of diphtheria was registered in Dublin.

The deaths referred to diseases of the respiratory system, which had been 71, 60, and 61 in the three preceding weeks, rose to 86 in the week under notice. Of the 420 deaths from all causes, 131, or 30 per cent., occurred in public institutions, and 9 resulted from different forms of violence. The causes of 17, or 4·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes did not exceed 0·6 per cent.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Canada and the War.

EVERYWHERE Canada feels the war. Doctors have forsaken good positions as medical officers of health to join their regiments, professors in the medical departments have already gone, also hospital superintendents. University corps are being rapidly established and trained. One notable professor has even joined one of these as a private—Professor J. George Adami. Schools of instruction in field ambulance and field hospital work have been established by the Government. The editor of the *Canadian Medical Association Journal*, Dr. Andrew Macphail, Montreal, has been taking this course of instruction in Toronto, along with a large class of civilian practitioners. Dr. Charles A. Hodgetts, medical adviser to the Canadian Conservation Commission, has been appointed Commissioner in Britain for the Canadian branch of the Red Cross Society, succeeding the late Colonel Burland of Montreal. The Director-General of the Canadian Army Medical Services, Colonel Carleton Jones, is with the Canadian Expeditionary Force; also Major Lorne Drum, general secretary of the Canadian Public Health Association, thus necessitating the cancellation of the annual meeting of this society, which was to have been held in Fort William and Fort Arthur in September. Medical societies in the leading centres have all contributed round sums to the Canadian Patriotic Fund. They have also pledged themselves to look after the practices of their *confrères* who have enlisted for service. They early put themselves on record as eager and anxious to care for the health of dependent ones of those qualifying for the front. Committees have been organised to look after the scarcity of drugs, and interest is being taken in the suspension of the Canadian rights of German patents in the pharmaceutical line. There are rifle clubs and home guards organised in every city and town. Shooting is being practised from premiers down. In fact, wherever one turns activities are observed in training, drilling, shooting, and the provision of relief for those at the front or their dependents. Thus it has been abundantly demonstrated that whenever England is at war Canada is at war.

The Canadians and Antityphoid Vaccination.

Whilst in camp at Valcartier, Quebec, the first Canadian Expeditionary Force were subjected to antityphoid inoculation. This was in charge of Dr. Charles A. Hodgetts, of Ottawa, and he was assisted by Dr. T. A. Lomer, medical officer of health, Ottawa; Dr. Campbell Laidlaw, pathologist, Ottawa General Hospital; Dr. Harry Morrell, pathologist, Regina General Hospital; and Dr. R. Woodhouse, medical officer of health, Fort William. The vaccine used was prepared in the laboratory of the Ontario Board of Health (presented by the Ontario Government), and was made up so that 1 c.c. equalled 500 million bacteria. The technique was simple, consisting in the application of the tincture of iodine over the injection area, followed by the injection. A second dose was administered in ten days of double strength. In the series of 45,000 injections probably the largest on record in the limited space of time, no severe cases of constitutional reactions were reported, though it was noticed during wet and cold weather the symptom of reaction was more pronounced than on dry and warm days.

Manitoba Sanatorium for Consumptives.

This institution was established in 1910 and in 1911, the first whole year, there were 168 patients admitted. In 1912 the number was 189; in 1913, 232; the admissions increasing largely in two years. The original policy of the hospital of admitting early cases only has never been adhered to because this sanatorium and the King Edward Hospital at Winnipeg being the only two institutions for the care of tuberculosis patients in Manitoba, they had to care for the entire field. The King Edward is a municipal hospital and cares for the advanced cases of the municipality of Winnipeg. The usual hygieno-dietetic means of treatment have been employed, artificial pneumothorax not having been used, but in suitable cases it will be used in the present year. In the year 1912 there were 492 deaths from tuberculosis in Manitoba, the totals running from 1909 to 1912 as follows: 402, 412, 438, and 492. Of the total deaths from all causes in Manitoba in 1912, the 492 cases of tuberculosis represented 8·5 per cent.—103·8 in 100,000 persons living. It is estimated that there are in the province 1800 cases. The 492 deaths were divided as follows: Pulmonary, 388; acute miliary, 7; meningitis, 54; abdominal disease, 25; Pott's disease, 6; white swelling, 2; tuberculosis of other organs, 7; and disseminated tuberculosis, 3. On Jan. 1st, 1913, there were 67 patients in the sanatorium—32 males and 35 females. There were 232 patients admitted during the year, 119 males and 113 females; and 203 patients were discharged—102 males and 101 females. 96 patients remained on Jan. 1st, 1914—49 males and 47 females. The total number admitted since the opening of the institution in June, 1910, was 686. On admission 2 were found non-tuberculous, 34 incipient, 52 moderately advanced, and 42 apparently hopeless. On discharge there were 3 not treated, 17 apparently cured, 58 quiescent, 70 improved, and 31 unimproved; 24 died. All save one of those classed as apparently hopeless on admission died.

Medical Inspection of Schools in Ontario.

The Education Department of the Province of Ontario has just issued a new code of regulations for the medical inspections of schools throughout that province. It is embodied in book form. It provides for one school board or a number of boards acting together to make provision for free medical treatment for pupils whose parents are unable to pay, and gives power to these boards to appoint a school medical inspection committee representing all boards. These committees must appoint a qualified medical practitioner of not less than two years' standing; but the medical officer of health of the municipality may be appointed with the consent of the Minister of Education and the Provincial Secretary, who has to do with all health matters in the province. The Act makes medical inspection compulsory in rural schools once every three months, in villages once a month, in towns once every two weeks, and in cities once a week. Provision is also made for the appointment of one or more nurses, and the medical inspector is subject to the school inspector or the principal. The medical inspectors are also required to act regarding the health of all children and conditions in schools as well as that in the home environment.

Toronto, Oct. 26th.

Correspondence.

"Audi alteram partem."

SIR JAMES Y. SIMPSON AND ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—I overlooked the courteous letter of Sir William Osler in THE LANCET of Oct. 31st correcting my reference to Sir James Y. Simpson as the discoverer of anæsthetics. The illustrious name of Simpson jumped to my mind in illustration of the point I wished to make, and at the moment I forgot that he had been anticipated with regard to ether. The interesting letter, again, of Dr. Leonard Guthrie in your issue of Nov. 7th corrects the Regius professor, and the two letters together are an additional exemplification of the point I wished to make that the discovery was due, was in the air, and focussed to practical usefulness almost simultaneously by several able experimenters. It seems incontestably shown by Dr. Marion Sims's article referred to by Dr. Guthrie that whereas nitrous oxide had been suggested as an anæsthetic by Sir Humphry Davy at the very commencement of the nineteenth century, the subsequent order of precedence in the discovery of various anæsthetics would seem to be Long (sulphuric ether) 1842, Wells (nitrous oxide) 1844, Morton (sulphuric ether) 1846, and Simpson (chloroform) 1847.

I still think that Simpson was the introducer of anæsthetics for general use in midwifery and in surgery, and it was not until his use of chloroform was established that disputes arose as to whom the reward of the discovery was due.

It is incidentally to be noted from the same source that the excitant properties of ether had been long known and utilised in America, and that on one occasion Dr. Wilhite had, in 1839, accidentally pushed the drug to the degree of extreme narcotism in the case of a negro.

I am, Sir, yours faithfully,

Portland-place, Nov. 9th, 1914. R. DOUGLAS POWELL.

THE SERUM DIAGNOSIS OF TUBERCLE BY THE FIXATION OF ALEXIN (COMPLEMENT).

To the Editor of THE LANCET.

SIR,—I have read with great interest the article by Dr. James McIntosh, Dr. Panl Fildes, and Dr. J. A. D. Radcliffe in THE LANCET of August 22nd last, but I regret to see that in the bibliography they have mentioned many German workers and have omitted Dr. W. d'Este Emery and myself, although THE LANCET published an article on this subject by myself on Dec. 31st, 1910, and by Dr. d'Este Emery in February, 1911. We worked independently, and we both found old tuberculin useless as an antigen.

In February, 1913, I sent THE LANCET an article on this subject. It was the outcome of two years' work and an experience derived from examining over 200 undoubted cases of tubercle and 100 normals and persons suffering from disease other than tubercle. As the article did not appear in THE LANCET I sent a copy to the *Indian Medical Gazette* in July, 1913, and it was published.

My technique is as follows:—

Antigen.—Human tubercle bacilli grown on glycerine veal broth, killed at 100° C., filtered, washed, and dried in vacuo. Half a grain is powdered very finely while dry in a watch glass with a glass rod till the particles become electrified by the friction. Thirty drops of 1 per cent. NaCl in ½ per cent. carbolic are then added, rubbing all the time. The whole of this is then transferred to a small tube, which is sealed with a piece of sealing-waxed paper; it is incubated for 24 hours, though 12 hours will suffice in an emergency. Three zones can now be distinguished—an upper opalescent, a central milky, and a third, clumps of bacilli. The two upper zones are pipetted off. This forms the antigen. It will keep for two or three days, but I prefer to use it only on the same day.

Serum.—40 c.mm. of fresh (i.e., not more than 36 hours old) patient's serum is placed in a small tube, this is heated in a water-bath to 52° C. for 15 minutes. I find 56° C. destroys some antibody. To this tube is now added 10 c.mm. of fresh serum (from the same patient), 10 c.mm. of antigen, and 250 c.mm. of 0·75 per cent. NaCl. A control of 10 c.mm. of fresh serum and 250 c.mm. of salt solution is also put up to show that complement is present. The tubes are now left at room temperature 60°-80° F. for one and a half hours or incubated at 98° F. for half an hour. Human alexin is very labile, and hence I found that incubation for one hour (when diluted) tends to destroy it. Sensitised goat's or sheep's red blood corpuscles are now added, 10 c.mm. of 5 per cent. emulsion. The corpuscles are well washed after sensitising, so as to remove all hæmolytic amboceptor. The tubes are now incubated for one hour and examined after all the cells have deposited (ice-chest over night or centrifuged). The slightest pink tinge is classed as doubtful; anything more than this is negative. With each batch, if possible, one or two normals should be put up; and until one is sure of one's technique, a known case of tubercle also. The only difficulty lies with the antigen; if it is found to fix the complement of normal serum, the bacilli in bulk should be well washed so as to remove anticomplementary substances (tissue extracts of the veal broth).

Note.—The proportion of tubercle antibody as compared to alexin in human serum is (except in chronic cases) as 1 to 4; hence the necessity of augmenting the antibody by using 4 parts of heated to 1 part of unheated serum.

I have examined serum from patients suffering from tubercle in almost every part of the body. I found the test most delicate in cases of lung, kidney, and spinal disease. When there is a small focus only—e.g., epididymis—I do not find the test delicate. In acute diseases of the lung the test fails, but as soon as the acuteness has abated the test comes off. Some normals occasionally give a positive result, but I have had very much fewer of these cases since rewashing the tubercle bacilli; but—and this is a very important point—a patient suffering from disease other than tubercle—e.g., appendicitis, pneumonia, abscess, osteomyelitis, &c.—shows a marked negative. My conclusions are as follows:—

1. This is a most delicate test for active tubercle, and is of great value in the diagnosis of the early stages of tubercle of the lung.

2. The tubercle antibody tends to disappear from the body very quickly. It is easily destroyed by heat, hence a temperature of 52° C. is preferable to 56° C. Human alexin is destroyed at 52° C. in 15 minutes.

3. Commercial tubercle bacilli may be used to prepare the antigen. As the tissue extracts in culture media contain substances which fix complement in normal serum, the bacilli should be washed if the antigen is found to be nonspecific. One knows that in doing an opsonic determination some brands of bacilli are useless till the emulsion has been washed in the same way as corpuscles are washed. The specific and active antigen appears to reside in the bodies of the bacilli, hence the necessity (especially if the bacilli have been well washed) of incubating the antigen for 24 hours. I do not find any reason to employ living bacilli. The nonspecific anticomplimentary substances appear to exist outside the bacteria (peptone, extractives, &c.)

4. A positive result can be relied upon when the patient is actually ill—i.e., losing weight, loss of appetite, fever, &c.; and when in the case of the lung there are even the faintest physical signs—e.g., impaired resonance in an apex, harsh

inspiration, &c. A positive result in health can be discounted.

5. A negative result can be relied upon if the patient is ill except in cases of very acute tubercle, when a positive result ensues later.

Fluctuation of the reaction.—In very acute tubercle the antibody cannot be detected; Dr. d'Este Emery also found this. In less acute it is present in a proportion of 1 to 4 compared with alexin; as the case progresses the proportion gradually increases to equal parts—i.e., 10 c.mm. of antigen will fix the complement in 10 c.mm. of fresh serum without the addition of any heated serum. As the case improves the antibodies pass off, till finally they can only be demonstrated by exercising the diseased organ or structure, or after subjecting it to passive congestion, or lighting it up by an injection of old tuberculin or peptone broth.

These latter measures give one a simple plan of further testing a case suspected to be tubercle, but giving a negative reaction.

As the first six months of this work was done in the inoculation laboratory at St. Mary's Hospital, London, W., most of the cases being Sir Almroth Wright's, I had, thanks to the kindness of Sir Almroth Wright, ample opportunity of comparing the two methods. My antigen and the tubercle emulsion used in the opsonic test are, except for the degree of dilution, the same; hence they must react on the same antibody.

I found that a low opsonic index went with a high immunity index, and *vice versâ*. This forces one to the conclusion that thermolabile opsonin is complement, and that the variations in the opsonic index are due to the absorption of complement during the incubation of the opsonic capillary tubes—i.e., the more the antibody present, the more the thermolabile opsonin absorbed. This is a very important consideration in treatment, for a lowering of the opsonic index should be the aim and not the dread. It further makes one reconsider the whole principle of the opsonic theory. I look upon a phagocytic index as only another means of demonstrating the Bordet-Gengou reaction.

As regards treatment by tuberculin, this test gives a laboratory demonstration of the poor value of tuberculin. Tuberculin is not an antigen to the true tubercle antibody; why, then, use it? In these days of autogenous vaccines I cannot understand why tuberculin has not long ago been discarded; I am inclined to think the reason is because it is a foreign introduction. I have found freshly prepared tubercle emulsion given in the same doses as tuberculin to be much more effective, but at present I am not in a position to state the case fully.—I am, Sir, yours faithfully,

V. B. Nesfield, F.R.C.S. Eng.,
Major, I.M.S.; late Chemical Examiner and Bacteriologist,
Government United Provinces, India.
Almora, U.P., Sept. 23rd, 1914.

THE LONDON PANEL COMMITTEE AND THE PRESCRIBING OF PANEL DOCTORS.

To the Editor of The Lancet.

Sir,—I have received a notice from the secretary of the London Panel Committee that they are, at the request of the Pharmaceutical Committee, making "investigations in respect of the drugs and appliances ordered by 65 practitioners during the period 12th to 30th April, 1914." I am then informed that, while for this period "the average cost of the prescriptions issued by all the practitioners on the panel was 9·7 pence," in my "individual case the average cost per prescription was nearly 1s. 1*d.*" I should like to dilate on the futility of an inquiry of this sort, in which no account is taken of the length of period for which medicine is supplied by each prescription; as a number of weekly prescriptions, costing, say, an average of 2*s.*, are a less demand on the drug fund than a correspondingly larger number of two-day prescriptions covering the same periods and costing an average of 9*d.* I should also like to know whether several prescriptions on one form, such as I am habitually writing, are counted as one or as many. In either case, by re-writing the prescriptions on new but more forms, and breaking them up, it would be perfectly easy, without at all altering the total amount prescribed, to reduce one's "average"—calculated in this absurd way—to almost any figure one wished.

But I am writing on a far more important matter which deeply concerns the other 64 practitioners alluded to. The Panel and Pharmaceutical Committees claim in this notice that they are carrying out the provisions of Article 40 of the Regulations of 1913. Now this article only empowers an "investigation" ...... "where it appears to the Panel Committee ...... that the cost of the supply of ...... the drugs or appliances ordered for insured persons ...... *is* in excess of what *may* reasonably *be* necessary for the adequate treatment of those persons"—that is to say, it authorises an investigation into prescriptions written for insured persons, to be made *while those persons are taking those prescriptions.* It cannot, therefore, apply to any inquiry into a number of prescriptions six months or more after the persons prescribed for have ceased to be under that treatment! Even if the wording of the article were not plain (which it is), common sense—which does not appear to be a strong point of the committees concerned—should show the impossibility of determining "what may reasonably be necessary for the adequate treatment" of anyone except when that person's ailment, symptoms, and idiosyncrasies (which, *pace* these Pharmaceutical and Panel Committees, even panel patients are human enough to have) can be actually examined and reported upon.

Another important point is that the Panel Committee are only empowered to "make a report to the (Insurance) Committee," on which alone the latter can act, "after hearing any practitioner concerned." Now no practitioner can be "heard" unless he voluntarily goes to the inquiry, and, when there, speaks. The Act and Regulations give the Panel Committee no power to compel him either to attend or to speak if he does attend, and yet no power to do anything without "hearing" him. I therefore advise my 64 brethren to reply, as I have done, that the "investigation" authorised by Article 40 is one to be undertaken during the treatment of the persons concerned, that this inquiry is therefore illegal, and that they must decline to give the Panel Committee the assistance of their presence, and will hold them legally responsible for any consequences that may ensue from their continuing to so conduct it. For my part, I welcome the "unsolicited testimonial" thus given me to the thoroughness of my treatment of my insured patients, for whom I, at all events, practically never order anything not in the British Pharmacopœia.

I am, Sir, yours faithfully,

Henry Bazett, M.A. Oxon., M.R.C.S. Eng.,
L.R.C.P. Lond.
St. Mary's-terrace, Paddington, Nov. 9th, 1914.

THE USE OF ALCOHOL ON THE BATTLE-FIELD AND ELSEWHERE.

To the Editor of THE LANCET.

SIR,—From one who may be supposed from constant association with the ill-effects of alcohol to be opposed to its use in any and every way, a few words may perhaps strengthen the eminently reasonable letter in THE LANCET of Oct. 10th of Dr. H. Lyon Smith on the above subject—reasonable because it is backed by personal scientific research which bears him out entirely.

My experience of many years' study of inebriety and inebriates leads me to uphold Dr. Lyon Smith's thesis. While there is, of course, no shadow of doubt that alcohol in toxic doses, or what amounts to the same thing in continuously taken moderate doses, acts harmfully on the animal organism, I have been unable to appreciate any harmful effects from a *strictly moderate* use of alcohol by persons of sound mental and physical health, such as our soldiers supposedly are. Dr. Mercier's statement that asylum observations show that insanity produces inebriety, rather than that inebriety produces insanity, as quoted by Dr. Lyon Smith, is undoubtedly a correct one. *Moderate* use of alcohol has never to my knowledge been proved to be a cause of insanity, but insanity in some degree may, I think, be said to be always present in true inebriety. What matters, not only on the battlefield but in everyday life, civil or military, is not that alcohol should be tabooed, but that it should be recognised by both the public and the medical profession as what it is—namely, a drug—one of the most powerful stimulant-narcotic drugs in the Pharmacopœia.

Dr. Lyon Smith has apparently satisfied himself that medicinal doses of 1½ to 2 oz. of whisky or other alcoholic liquor of like strength have a beneficial rather than a harmful effect on phagocytosis, so that it would be well unless those "scientific temperance lecturers" can prove the contrary that they should cease to use this argument against the use of alcohol except in so far as it applies to large doses, which neither Dr. Lyon Smith nor myself desires to defend or advocate. There appears to me to be only one danger of Dr. Lyon Smith's suggestion and advocacy in "emergency alcohol rations" for the troops—namely, that such rations might not, and I regret to say in all probability *would* not, be used with the same regard for dosage as other medicinal agents. This danger is, however, no argument against Dr. Lyon Smith's thesis, but for a better appreciation and knowledge of the actions and reactions of alcohol, such as would ensure a skilful and careful use of these rations.

The misuse and abuse of alcohol existing in this country in spite of "the wave of temperance which has gained much from the efforts of many distinguished members of our profession," is likely to continue until these distinguished members succeed in teaching, first our own *confrères* and through them the public that alcohol is a drug, not necessary or beneficial to the healthy individual, valuable in strictly moderate doses on occasion (by strictly moderate doses I mean from ½ to 2 oz. of good whisky, cognac, or gin), and extremely harmful in large or in frequently repeated small doses, exactly as is the case with other drugs of a similar nature—namely, the stimulant-narcotic group, and that, moreover, there are many more individuals than is generally supposed of such unstable psychophysical constitution as to be extremely susceptible to its toxic actions even in these extremely moderate doses, and that to these persons alcohol should without question be taboo.

I am, Sir, yours faithfully,

J. W. ASTLEY COOPER,
Medical Superintendent, Ghyllwoods Sanatorium for Treatment of Inebriety.

MEDICAL AUTOGRAPHS.

To the Editor of THE LANCET.

SIR,—The Reading Pathological Society has during many years collected in an album the autographs of distinguished medical practitioners, especially of such as have contributed to the progress of medicine, and are therefore "on fame's eternall bead-roll worthie to be fyled."

Such autographs, especially when accompanied by portraits, form a delightful addition to our knowledge of those personalities who are the *decus et desiderium medicinae*, and possess no small biographical and historical value. Medical societies will find in the formation of such an album a means of cementing the friendships of the living, and of perpetuating the memory of those who have passed beyond the veil.

Our collection already contains many interesting specimens of professional autographs, but further contributions (whether of British, American, or foreign origin) will be warmly welcomed.

I am, Sir, yours faithfully,

Westfield, Reading, Nov. 7th, 1914. JAMIESON B. HURRY.

PROGNOSIS IN CANCER OF THE TONGUE.

To the Editor of THE LANCET.

SIR,—Dr. Francis E. Shipway's letter in THE LANCET of Nov. 7th raises the important question whether the intratracheal administration of the anæsthetic or the administration of it through a temporary opening in the windpipe is the more satisfactory procedure in cases of cancer of the tongue. In an article under the above heading in your issue of Oct. 24th I had expressed a decided preference for the latter method. Dr. Shipway disagrees with my conclusion, and gives a number of arguments in favour of the intratracheal method.

I should like to state at once that I have no general objection whatever to Meltzer's procedure in cases where there is no ulcerating growth in the mouth or pharynx. I have done a number of operations under anæsthesia maintained in this way, and have been duly impressed by its many advantages. Again, I must express my satisfaction at finding myself in agreement with so authoritative an opinion as Dr. Shipway's as to the importance of a restricted airway in the causation of lung infections by aspiration. It is too often thought even now that, provided no serious grade of asphyxia is produced, a grossly obstructed airway has no importance, whereas a little consideration will make it obvious that obstruction increases the force with which foreign material from the mouth and pharynx is sucked into the air passages.

Dr. Shipway objects to a temporary opening of the windpipe as an addition to the length and severity of the operation. In cases of cancer of the tongue laryngotomy is practically always the operation of choice, tracheotomy being necessary only when the pharynx is involved and the opening has to be maintained for some days. Laryngotomy can invariably be done in a few minutes; if an ordinary bivalve tracheotomy tube be used the incision of the crico-thyroid membrane can be limited to the smallest puncture, so that the tube fits tight enough to prevent leakage of blood into the trachea and the opening closes very rapidly after the operation. In this way is avoided the most serious objection to the procedure—interference with the effectiveness of coughing. In my experience patients even when old and feeble settle down after the opening has been made into an extremely placid condition, in which they seem able to tolerate prolonged, extensive, and elaborate operations in a very remarkable way. I have no doubt that this relative immunity from shock is to a large extent due to the easy and quiet respiration.

With regard to the gland operation, which as I have shown may be followed by pneumonia if done as a preliminary to the removal of the primary growth, Dr. Shipway points out that either a preliminary laryngotomy must be done and repeated when the primary growth is dealt with, or the glands and the primary growth must be removed at the same time. I agree entirely with him that the latter alternative is usually undesirable, and would go so far as to say that it is often impossible. The former alternative—laryngotomy at each stage—is the method I generally use and one which gives very satisfactory results.

Turning now to the objections which I venture to think may be made to the intratracheal method, I should like to state quite definitely that in my view these apply solely to cases in which there is a foul ulcerating growth in the mouth. In cases where the growth is small, warty, or superficial, and ulceration is slight or absent, and in cases where the primary growth has been removed and the gland operation alone remains to do, I have nothing to urge against the method. Where, however, the growth is large or deeply ulcerated I believe there are grave disadvantages in it being disturbed in any way before it has been completely exposed for removal. I do not believe the direct laryngoscope can be passed without considerable risk of very gross disturbances. It seems to me that the growth must be liable to be squeezed, bruised, or even torn, and that septic material may be expressed from the ulcer and conveyed by the instrument to the upper opening of the larynx, whence by a few spasmodic inspirations upon the introduction of the tube it may well be carried into the lungs.

In this special class of case, therefore, I believe temporary laryngotomy to be the sounder method, since it suspends aspiration from the mouth without any interference with the growth. For these reasons I am not able to quote from my own experience with regard to the use of the intratracheal method in cases of this class. It happens, however, that in the same number of THE LANCET as that in which Dr. Shipway's letter appears there is an interesting article by Mr. Rupert Llewellyn Jones giving in detail his experiences of 49 cases of various kinds in which Meltzer's method was used. Two of these were cases of cancer of the tongue. One (Case 7) died from pneumonia. It is specifically stated that the catheter was passed without difficulty, so that we may assume that the amount of disturbance of the growth was not abnormal. The condition present in the mouth is described as a large and foul ulcer.

In the second case (No. 16) "intubation was tried repeatedly for 30 minutes but unsuccessfully, owing to infiltration of the base of the tongue," and laryngotomy was done. It is difficult to believe that this period of manipulation was unaccompanied by considerable disturbance of the growth, and that it failed to contribute to the fatal result which followed from heart failure 28 hours later.

These two cases contrast very markedly with the admirable results recorded in other conditions in Mr. Jones's paper, but I would wish to guard myself against being supposed to attach undue importance to their want of success as they occur early in the series. I quote them therefore chiefly as illustrations of the type of case in which I feel that preliminary laryngotomy is a safer procedure than Meltzer's method, and of the difficulties and complications I should fear if the latter were used.

I am, Sir, yours faithfully,

Harley-street, W., Nov. 9th, 1914. WILFRED TROTTER.

INTRATRACHEAL ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—Perhaps you will allow me again to occupy some of your limited space, for I see that Mr. Rupert Jones mentions my name in his article this week (p. 1087) in connexion with two cases anæsthetised by me at the Bristol General Hospital last year. The description of these cases comes from the pen of Mr. Jones. Case 49 was an uneventful anæsthesia well suited for demonstration purposes. Case 1 was of unusual interest, and although Mr. Hey Groves and myself had misgivings as to its suitability, I decided to take my chance and not to disappoint those medical men who had so kindly taken the trouble to be present. On referring to my notes I find that owing to cough and dyspnœa the patient had to be anæsthetised in the semi-recumbent position. As induction with chloroform proceeded (C.E. caused too much coughing) respiration became increasingly embarrassed, there was cyanosis, and a high-pitched whistling inspiration. The patient was intubated as soon as possible, and an immediate improvement in his condition resulted, but subsequent anæsthesia was difficult and not satisfactory, as the paralysed cord introduced an undesirable complication. Tracheotomy might have been a better solution, although Mr. Hey Groves said afterwards that "it was through the application of the method that the operation had been made possible." Case 7, in which pneumonia occurred, is interesting, but I should like to have fuller details before making any comment.

You raise the question, Sir, in your annotation (p. 1103) whether this method should be used for ordinary routine work. I do not think so. Undoubtedly Mr. Jones used these cases in order to learn the technique. Admittedly the catheterisation of the trachea is a difficulty in some patients, but there is much excellent advice on this subject in various articles by American writers which can be studied with profit. The only difficult cases to one familiar with the method are those in which a preliminary gland operation for cancer of the mouth has produced much scar tissue. So many cases of cancer of the mouth, however, are edentulous, either partially or completely, that they should not present any difficulty.

I am glad to see your remarks, Sir (in reference to the paper by Mr. W. Dakin Mart), on the principles of intratracheal insufflation. The difference between this and intratracheal administration without positive pressure cannot be too strongly emphasised. Meltzer and Auer's method has definite cardinal principles. A careful study of the literature, especially of their original articles, is essential for success, and obligatory upon all who use the method. Otherwise a very valuable discovery and a fine piece of scientific work will be brought into discredit. Chloroform and C.E. have been tried in a few cases at Guy's, but I am not justified in saying anything definite about them at present, except that chloroform appears to be unsafe, for the reason I think that the stimulating effect of inspiration upon the circulation is practically abolished. I am, Sir, yours faithfully,

Francis E. Shipway.

Queen Anne-street, W., Nov. 7th, 1914.

Obituary.

JOHN HARTLEY, F.R.C.S. Eng.,

HONORARY SURGEON TO THE DARLINGTON HOSPITAL.

The death of Mr. John Hartley, at his residence at Darlington on Oct. 3rd, will be deeply regretted by many old Middlesex men, by whom he was well known and much respected. He was the second son of the Rev. Charles Hartley, rector of Stocking Pelham, Herts, where he was born in 1857. He was educated at King's College, London, and at the Middlesex Hospital, where, after qualifying, he held the appointments of house surgeon, house physician, and resident obstetrical assistant. He then joined his brother, the late Mr. Charles Hartley, in practice at Dunmow, Essex.

Being keen on hospital work he returned to London and became clinical assistant at the Royal Westminster Ophthalmic Hospital. From there he was appointed senior demonstrator of anatomy at the Middlesex Hospital, which post he held for five years. On his resignation the staff and pupils made him a handsome presentation. During the time he was demonstrator of anatomy he was beloved by the students, and those who took an interest in their work found him a willing and accomplished helper in the pursuit of knowledge. He took his Fellowship in 1892, and four years later bought the practice of Dr. E. W. Forster in Darlington. About two years after he was appointed one of the honorary surgeons to the Darlington Hospital, which post he held till his death. For many years he spent about two hours each morning at the hospital, going carefully and skilfully into the details of every patient's illness. He always welcomed the help of his colleagues, and was ever ready to help them with advice or assistance in operations, and his opinion was much valued by a large circle of practitioners both in the town and surrounding district. The last years of his life were very busy in consultation and in surgical work. His geniality, straightforwardness, and generosity endeared him to a large circle, and his funeral was attended by a very large gathering of mourners. He leaves a widow but no family.

JAMES GREGORY MUMFORD, A.B., M.D. Harv.,

PHYSICIAN-IN-CHIEF, CLIFTON SPRING SANATORIUM AND HOSPITAL, NEW YORK.

Dr. James Gregory Mumford, who died on Oct. 18th at Clifton Springs, New York, where he was physician-in-chief to the sanatorium and hospital, was known in this country mainly through his writings, many of which have been reviewed in our columns. His "Narrative of Medicine in America" (1903) was a fascinating book, just and honest, and, as we stated in reviewing it,[1] a solid contribution towards the history of the profession in the New World. He also wrote the article on the history of surgery in Keen's "System of Surgery." Another pleasing little work was "A Doctor's Table Talk" (1912). His other works were surgical, and comprised an unconventional "Practice of Surgery" (1910), the "Surgical Aspects of Digestive Disorders" (1905), and "Surgical Memoirs and Other Essays" (1908).

Dr. Mumford was born at Rochester, New York, on Dec. 2nd, 1863. He graduated as A.B. at Harvard in 1885 and M.D. in 1890. After holding surgical appointments at the Carney Hospital, Boston, he became out-patient surgeon, and subsequently visiting surgeon, to the Massachusetts General Hospital, and assistant and subsequently instructor in surgery at Harvard Medical School. In 1912 he was appointed physician-in-chief to the Clifton Spring Sanatorium and Hospital.

THE NATIONAL COUNCIL FOR COMBATING VENEREAL DISEASES.

The inaugural meeting of the National Council for Combating Venereal Diseases was held at the house of the Royal Society of Medicine on Wednesday afternoon last, when Sir Thomas Barlow presided, and explained in a brief address the aims and objects of the movement. The movement had its origin, he said, in a request from Major Leonard Darwin, the President of the Eugenics Education Society, to Sir Rickman Godlee, as President of the Royal College of Surgeons of England, and himself, as President of the Royal College of Physicians of London, to support a movement for national education on the subject of venereal diseases. Sir Henry Morris, President of the Royal Society of Medicine, having promised the coöperation of that body, a strong committee was formed to report on the incidence and prevalence of these diseases, on the provision existing for their treatment, and on the amount of instruction usually offered to the medical profession on the matter. The committee, whose work has been submitted to the Royal Commission on Venereal Diseases, went further and examined the need for popular information. They found the prevalence great, the provision for treatment, especially in London, poor, and the instruction given inadequate. It was to remedy these matters that the National Council would primarily work. But the breaking out of war offered them a special field in the aggregation of large bodies of young men in camps, with all the dangers implied to both sexes in the altered relations of the civil population. Sir Thomas Barlow was glad to announce that such work as the National Council proposed to do was heartily welcomed by Lord Kitchener, who it is known has already approved of a scheme for educating the army on such matters by qualified lecturers. The National Council will also supply a panel of such teachers and lecturers, carefully selected, and to be used in assistance of the work now going on. He closed with a few words of thanks for the coöperation which the movement was receiving from women. He proposed the following list of resolutions:—

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[1] The Lancet, Jan. 30th, 1904, p. 307.

That it is desirable that a National Council for Combating Venereal Diseases be formed with the following aims and objects:—

1. To provide accurate and enlightened information as to the prevalence of these diseases, and as to the necessity for early treatment.

2. To promote the provision of greater facilities for their treatment.

3. To increase the opportunities of medical students and practitioners for the study of these diseases.

4. To encourage and assist the dissemination of a sound knowledge of the physiological laws of life in order to raise the standard both of health and conduct.

5. To coöperate with existing associations, to seek their approval and support, and to give advice when desired.

6. To arrange, in connexion with such organisations, for courses of lectures, and to supervise the preparation of suitable literature.

7. To promote such legislative, social, and administrative reforms as are relevant to the foregoing aims and objects.

Lord KINNAIRD, President of the Young Men's Christian Association, spoke in support of the objects of the meeting, which he said had long been before the minds of many of those interested in rescue work, but they had spoken hitherto to an uninterested public.

Sir FRANCIS CHAMPNEYS, in seconding the resolutions, said that the former attitude of recklessness towards the evils of venereal diseases had disappeared; people no longer thought that the evils must go on because they had existed for so long, nor that the sufferers were rightly punished for their sins. The fact that early syphilis was susceptible of cure had counted in the altered view, while he considered that this time of war was well fitted for the inauguration of the National Council.

Colonel H. EVERITT, representing the White Cross League, having briefly addressed the meeting on the work of his association, the seven resolutions were adopted unanimously.

Major LEONARD DARWIN then proposed that the following be the constitution of the council:—

1. The National Council for Combating Venereal Diseases shall consist of a council, an advisory board, and an executive committee.

2. The council shall consist of those persons whose names are set forth in the schedule attached, and of such other persons as may from time to time be invited to join either as individuals or as representatives of the principal societies and institutions engaged in social and educational work.

3. The council is formed for the promotion of the above-mentioned aims and objects. It shall meet at least once a year, shall receive reports from the advisory board and the executive committee, and shall determine all questions of policy and administration. Fourteen days' notice shall be given by a member of any resolution he intends to move at a meeting.

4. The advisory board shall consist of not more than ten persons to be selected by the council at its annual meeting. The advisory board shall have power to add to its number, provided that the total number of the board does not exceed 18.

5. The advisory board shall advise the council with regard to the policy to be pursued. No decision on any matter concerning questions of policy shall be taken by the council unless the advisory board shall have had an opportunity of expressing an opinion thereon.

6. The executive committee shall consist of three members of the advisory board, selected by that body and of not more than nine other persons selected by the National Council at its annual meeting.

7. The executive committee shall carry out the policy determined by the National Council, shall report to the National Council, and shall consult the advisory board on questions of policy. It shall call a meeting of the National Council at least once a year, and also at any time when so requested by the advisory board. It shall call meetings at other times for special purposes on the request of 20 members. It shall send to the advisory board, ten days before any meeting of the National Council, copies of any documents intended to be submitted to the council for consideration. It shall appoint committees, who may be given power to add to their numbers. It shall frame rules of procedure for the meetings of the National Council and of its committees.

8. The executive committee shall, as far as possible, promote the formation of local committees in important centres of population, and render them all assistance in its power.

Major Darwin explained the simplicity of the proposed constitution as being deliberate, so that the Council could either stop when its work was taken up by some other body, or develop into any greater form that might be necessary.

Dr. CHARLES J. MACALISTER seconded the motion and spoke, in reply to direct invitation, of the work that had already been done in Liverpool, on the initiative of the Liverpool Medical Institution and with the coöperation of an enlightened Lord Mayor and Lady Mayoress. At Liverpool lectures are delivered, he said, by selected men to male audiences and selected women to female audiences, and though on account of the war the lectures to males had now ceased, the audience being dispersed through the country, those to females went on.

Cardinal BOURNE, Archbishop of Westminster, spoke eloquently as to the value of the work which the National Council proposed to undertake, and Dr. INGE, the Dean of St. Paul's, poured scorn on the doctrine, which he termed blasphemous, that venereal diseases should be regarded as a divine punishment for sin.

The constitution of the Council having been adopted, Mr. CHARTERS SYMONDS proposed a long list of persons well known in medical, philanthropic, scientific, and educational circles who should form the first Council. He explained that it was intended that the Council should have the power to invite other persons to join their body either as individuals or as the nominees or representatives of societies and institutions engaged in medical, social, and educational work.

The motion was seconded by Mrs. CREIGHTON and duly carried.

Sir RICKMAN GODLEE proposed that owing to the present state of affairs due to the war the advisory board be not at present constituted, but a provisional executive committee be formed to carry on the work of the Council, with power to add to their number. It was further proposed that the Provisional Executive Committee of the National Council should be constituted as follows:—Sir Clifford Allbutt, Sir Thomas Barlow, Sir Francis Champneys, Sir Watson Cheyne, Mr. W. A. Coote, Major Leonard Darwin, Colonel T. W. Gibbard, Sir Rickman Godlee, Mrs. James Gow, the Right Hon. Lord George Hamilton, Lady Laura Ridding, the Lord Bishop of Southwark, Mr. Charters Symonds, Dr. Frederick Taylor, Mrs. Torrey, Dr. Helen Wilson; and that the honorary secretaries of the National Council should be Dr. Douglas White and Mrs. Gotto.

This motion was adopted, after which Sir MALCOLM MORRIS spoke briefly as to the value set upon the work which the National Council proposed to do by the Royal Commission on Venereal Diseases. He said that the work of that Commission had necessarily been arrested by the war, but he thought that he might mention that an interim report would be forthcoming which would be useful in the present juncture.

The proceedings closed with a few words of thanks from Sir THOMAS BARLOW to many busy persons, some from distant provincial centres, who had attended a large and representative meeting.

THE WAR.

THE CASUALTY LIST.

THE following casualties among officers in the Royal Army Medical Corps serving with the Expeditionary Force have been reported since our last issue:—

Killed: Captain Richard George Kinkead.

Wounded: Captain H. G. Gibson, Lieutenant G. R. Grant, Lieutenant C. W. B. Littlejohn, Lieutenant F. G. Thatcher, and Lieutenant T. A. O'Driscoll.

Missing: Captain A. M. Pollard.

Captain B. Johnson, previously reported missing, is now reported a prisoner of war. A letter has been received from Crefeld from Captain W. Egan, who was taken prisoner on August 28th. Captain A. D. Fraser, reported missing three weeks ago, should read Captain A. E. G. Fraser.

Lieutenant Douglas Wardleworth, R.A.M.C., has been accidentally drowned while on military duty at Havre.

Among the executive officers who lost their lives with the Royal Naval Division in the operations around Antwerp was Sub-Lieutenant Edwyn Manners Ridge, R.N.V.R., who was a Fellow of the Royal College of Surgeons of England and practised at Enfield.

HEALTH OF THE TROOPS IN THE FIELD.

As far as we are able to judge from the limited information to hand, the health of our troops in the field is satisfactory. This is very encouraging. The time of year is not favourable to epidemic disease. With the onset of colder weather and especially a prevalence of rain, life in the trenches will become very trying to all who are not constitutionally sound, and bowel complaints may be expected to prevail, dysentery, and diarrhœa due to chill. The Queen's opportune appeal to the women of the Empire for 300,000 body belts and 300,000 pairs of socks has met with a speedy and satisfactory response, and the distribution of these most opportune gifts should do much to ward off what has so often proved to be the scourge of armies. Dysentery and the liver affections that so often accompany it have always been a source of suffering and inefficiency to armies in the field. Insufficient and improper food, accompanied by chill, due to variations in temperature and insufficient clothing, are the usual predisposing causes, and may operate in cold and inclement weather as well as during excessive heat. From all we hear, the feeding of the troops has been excellent. The commissariat department has been well organised, and the supplies have been plentiful and of first-rate quality. The difficulties to contend with are enormous over such an extensive field of operations. On the other hand, the allied troops are not fighting in a hostile country, and have therefore the advantage of an abundant and regular supply of all necessary articles of food. No doubt, also, warm clothing has been, or is being, issued. In the Crimean war, when our troops were fighting alongside the French, as they are to-day, there was a marked difference in the health of the two armies during the first winter. This was due, in the opinion of all competent judges, to the much better condition of the French than of our own troops in regard to field equipment and supplies. They had shelter tents, overcoats, and excellent provision of bread and food articles generally. Our soldiers, on the other hand, were exposed to cold and wet without adequate protection, the regulation clothing was most unsuitable, and the feeding bad, consisting almost exclusively for a considerable time of salt meat and biscuit, without vegetables. Subsequently the manifest deficiencies were rectified, and the British troops during the second winter were much healthier than the French force. At the present time our supply department seems to have been extraordinarily well managed in regard to all essentials. There is, however, plenty of room for the aid that may be given by private benevolence. The belts and socks that have been promised will be most valuable, and we hope are already on the way to the field of action. Allusion was made in these columns recently[1] to the danger of importation of infectious disease in army clothing made by out-workers. A tailoress making army greatcoats was at work in a house where scarlet fever had broken out. Such a risk of introducing infection should be rendered impossible. Tetanus still appears in many cases of wounds, probably due to contact with specifically contaminated earth. It is difficult to see how this can be avoided under the conditions that prevail. The use of the specific serum, in addition to the ordinary antiseptic measures, may be expected to control this danger. Our troops, from all we can gather, are admirably fed and clothed, and their spirit, as we know, is magnificent. What is needed now is to preserve their health and sustain their spirit. We feel sure that no effort will be wanting on the part of the nation to secure this end. We are told that the Germans have pianos in their trenches and that they sing a great deal. Our troops may not have the instrumental accompaniment, but are probably quite as well able to sing as those on the other side. Meantime let there be more and more belts and socks got ready in good time to replace those that become unserviceable.

INDIAN SOLDIERS' FUND.

As we have already recorded, a very strong representative committee, under the chairmanship of Sir John Hewett, G.C.S.I., C.I.E., has been appointed to administer the results of the appeal for the Indian Soldiers' Fund—a fund to supplement the provision for ambulances, base hospitals, and the necessaries of war for the Indian Force of some 40,000 or 50,000 men despatched in such dramatic circumstances to fight in France with the Allied troops. The Order of St. John of Jerusalem, whose influence and work in India is described this week elsewhere by one of our correspondents, has provided a hospital, and the Indian Fund also desires to supplement the clothing and comforts already provided for the Indian troops by the Government with articles which it does not fall within the responsibility of the Government to offer, and to repair the almost inconceivable wastage of war. The Indian Fund was started by grants from the Order of St. John of Jerusalem (£10,000) and the Viceroy's Imperial War Fund (£6666), and soon reached a total of £55,000. It now stands at over £80,000 we are told, but a far larger sum can be spent with advantage. Donations of money may be sent to the honorary secretaries of the Indian Soldiers' Fund at 1, Carlton House-terrace, S.W.—Mr. P. D. Agnew and Mr. E. H. Blakesley. Clothes or comforts may be sent direct to the Warehouse Subcommittee at 29, Somerset-street, London, W. A list of 12 subordinate committees to the General Committee of the Indian Soldiers' Fund was rapidly formed, and Sir Havelock Charles and Sir Trevredyn Wynne went to France to be in a position to reply to any questions dealing with voluntary aid in hospitals and ambulance work of all kinds, with special reference to the work of the Indian Soldiers' Fund. They have reported that the wounded are receiving every possible care and attention in France, and that there is a large field for voluntary aid in ambulance work to supplement regular ambulance work, and working under the directions of the regular Army Medical Service. With respect to such work as the Indian Soldiers' Fund was specially constituted to undertake, they reported, after an interview with Sir Savile Crossley, Commissioner with the Red Cross in Paris, that the Order of St. John of Jerusalem should not establish a separate organisation to work its own motor ambulances, particularly as the French authorities would not readily understand the installation of another ambulance association. They discussed the delivery of clothing and comforts to the Indian troops at the front with the Adjutant-General and Quartermaster-General at head-quarters in the field, with the Generals commanding the lines of communication and the Indian Expeditionary Forces, and with Sir Savile Crossley, and they arrived at a method in which it would be possible to deliver stores to the Indian troops at the front. Their net conclusion is that the Indian Soldiers' Fund must establish a base depôt in France at a seaport, and if necessary sub-depôts between the port and the front; that stores from these depôts must be delivered to the different Indian regiments by a motor lorry service and worked by the Indian Soldiers' Fund. The scheme, after official sanction, will entail the provision of six motor lorries and two motor cycles, three passenger motor-cars, and an officer with two assistants. Mr. Elles has volunteered to take charge, and Mr. Fenton, who is the son of Mr. Du Cros's agent in Paris, will act as one of the assistants. The further staff required to work the lorries and cars will be enlisted, and a suitable house must be rented in Boulogne for a base depôt, when the stores already in hand can be sent there. The stores will then be run to the rear of the Indian contingent, the motor cyclists acting as commercial travellers to let regiments know where the supply lorries are and to ascertain what is wanted, as well as to regulate other stores being sent. Sir Alfred Gaselee has expressed his willingness to proceed to France to make the necessary arrangements, which should ensure the disappearance of all preliminary difficulties.

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[1] THE LANCET, Oct. 24th, p. 1003.

AGAINST LOSS OF MEN BY SINKING OF SHIPS.

The most serious risk before our fighting ships in this war is destruction by submarine mines or by torpedoes. Under these circumstances many men are struggling in the water, and the more wisely preparations are made for these emergencies the more lives will be saved. It will be well, then, that we reproduce from THE LANCET of Oct. 7th, 1911, the measures the Japanese found most helpful in these difficult situations, as reported in the fourth volume of the official Japanese history of the war with Russia in 1904–05, and translated by Staff-Surgeon Chemin, of the French Navy, for the *Archives de Médecine et Pharmacie Navales* for September, 1911. Rule 1 is that the men should not on any account remove their clothing, even heavy clothing, before jumping overboard; the air entangled in it is only gradually displaced by water, and meanwhile it buoys the man up a little and goes on acting as a non-conductor of heat, and so for a time lessens chill and minimises shock. We know of an officer who was thrown overboard from a torpedo-boat in the Mediterranean in great-coat and sea-boots. When in the water he managed to get off one sea-boot, but finding himself pretty comfortable, he did not let it go or attempt to remove the other, and was very shortly picked up with his clothing intact. So clothing, however heavy, does not sink a man for a time. The chief danger from clothing comes later, when in now thoroughly soaked clothing the wearer is being rescued. He is by this time exhausted and cannot do much, or perhaps anything, to help himself and as he is being lifted out of the water into the boat he gets rapidly heavier and heavier, and this increased weight may overpower the too light grip of him taken by his rescuers, who had not expected this so rapid increase of weight. A man in the water should not try to swim except for some definite purpose, but be content to float and be satisfied if he can just keep his mouth above water, and he will be greatly assisted by the air-collars so thoughtfully provided by the Admiralty. The best life buoy, short of a cork jacket, is a lashed-up hammock; it does not turn over and over like a cask, and there is always the lashing to hang on to; and a hammock has been known to keep a man afloat for 24 hours. A man, especially if exhausted, should never let go of his hammock, however near the boat is, until his rescuers have a good hold of him. Many a man is lost through neglect of this little precaution. The boats rescuing men should be as low-sided as possible. It is a great trouble to get men into launches with high sides, and took a long time. The quicker each man can be picked up the more men obviously will be saved. When a man has been rescued get his wet clothes off, wrap him in dry blankets (have some in the boats), give him a hot drink (not an alcoholic drink), and lay him down in a warm part of the ship (flats or ammunition passage), and then will have been done for him the best thing possible. These instructions may be summed up thus:—"Don't take your clothes off; don't try to swim; don't let go of your hammock."

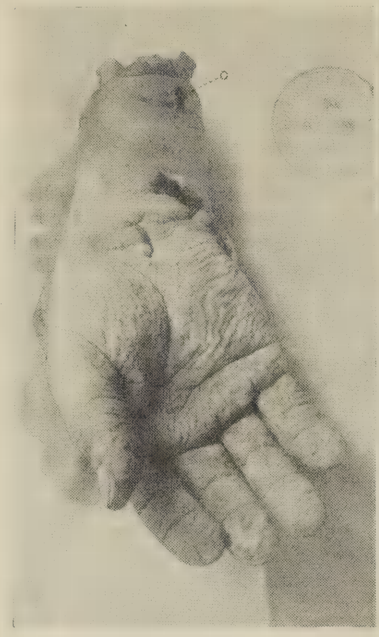
ENTERIC FEVER IN WAR.

Sir William Osler will open a discussion at the next meeting of the Society of Tropical Medicine and Hygiene on Friday, Nov. 20th, at 8.30 P.M., at 11, Chandos-street, Cavendish-square, on "Enteric in War with Means for its Prevention." In view of the exceptional interest of this subject it has been decided to invite members of the medical profession who are not Fellows of the Society to attend as visitors, and especially any who may have had recent experience of the inoculation of the troops. Any who will send their names to the secretaries of the society, 11, Chandos-street, Cavendish-square, W., will be furnished on request with a précis of Sir William Osler's paper introducing the subject.

THE QUESTION OF EXPLOSIVE BULLETS.

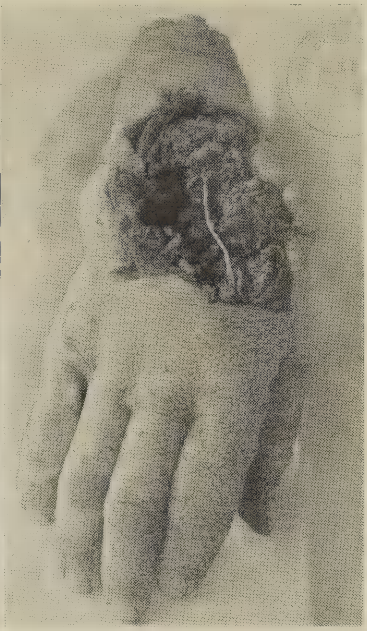
The photographs and radiograph which we reproduce below were brought to us by a Belgian doctor as a clear and irrefutable proof that the injured soldier was struck by an explosive bullet. It is common knowledge that the vast majority of wounds which earlier in the war were attributed to explosive bullets on account of the enormous destruction of tissue are capable of more decent explanation. The point was well summed up last week by one of our correspondents in describing the wounds which he had been treating in a hospital at Chambéry, where all the appearances that might be attributed to explosive bullets were obtained both from shrapnel and from modern conical high-speed bullets which have either twisted on their axis of direction towards the end of their course or which have undergone *ricochet*. But that some revolver ammunition of an explosive type has been employed seems probable. Our correspondent considered that a study of the photographs would convince the most sceptical that in this case an explosive bullet had been employed.

FIG. 1.



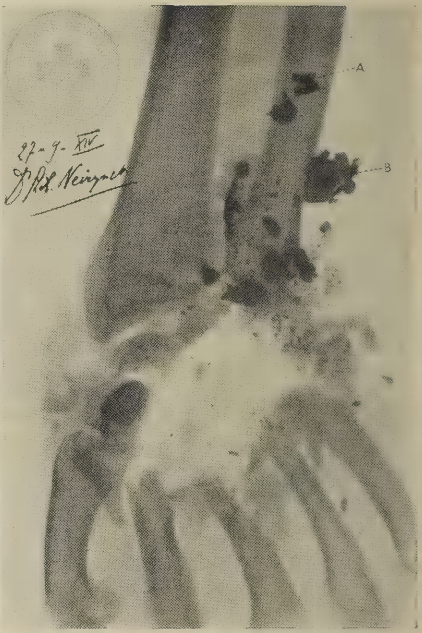
Palmar view.
O, Orifice of entry of bullet.

FIG. 2.



Dorsal view.
Showing great destruction.

FIG. 3.



Radiogram. A, Metal clasp (*agrafe*) above wound of entry. B, Big fragment of bullet, smaller fragment being scattered.

CONSULTANTS TO THE ROYAL NAVY.

The following names of temporary consultant physicians and surgeons appear in the current issue of the Navy List:—Sir W. Watson Cheyne, Mr. G. R. Turner, Mr. Arthur Edmunds, and Mr. C. H. M. Hughes (Naval Hospital, Chatham); Mr. G. Lenthal Cheatle, Dr. H. D. Rolleston, and Mr. C. W. Morris (Naval Hospital, Haslar); Mr. Raymond Johnson (Naval Hospital, Plymouth); Sir Alfred Fripp and Dr. D. A. Shields (H.M. Hospital Ship *Sheelah*); and Sir William Macewen.

SURGEONS IN THE "GOOD HOPE" AND "MONMOUTH."

In the naval action off the coast of Chile it is feared that both H.M.S. *Good Hope* (Admiral Cradock's flagship) and H.M.S. *Monmouth* have been lost with their brave crews. According to the Navy List for November the surgeons serving on board these two cruisers were as follows:—*Good Hope*, Fleet-Surgeon James J. Walsh, Surgeon Francis C. Searle, and Surgeon (Reserve) Fernand L. T. M. de Verteuil. *Monmouth*, Staff-Surgeon Henry Woods and Surgeon Albert J. Tonkinson. We earnestly hope that later messages may bring news of survivors.

THE WRECK OF THE "ROHILLA."

The hospital ship *Rohilla*, which, as reported last week, was wrecked off the Yorkshire coast on Oct. 30th, carried the following medical men on board, all of whom, we are glad to state, have been saved, although the ship is a total wreck: Fleet-Surgeon Ernest C. Lomas; Surgeon S. L. McBean; Temporary Surgeon T. H. Cresswell; Surgeons R.N.V.R., T. C. Litler Jones, H. Leith Murray, A. E. W. Hird, and L. S. Ashcroft. Mr. F. W. Paul, who was on board as civilian dental surgeon, was also saved, as were the four nursing sisters.

OUR BELGIAN REFUGEE COLLEAGUES.

Belgian medical men now residing in London, at a general assembly of their number held last week, passed a resolution, which we reproduce below, showing their real recognition of anything which their English colleagues may have been able to do for them in their sad position. The resolution runs as follows:—

Aux Autorités Médicales Anglaises.

Les médecins Belges résidants à Londres, réunis en assemblée générale le 2 Novembre, 1914, ont l'honneur de présenter aux hautes autorités médicales Anglaises les sentiments de leur plus vive gratitude pour l'insigne honneur dont ils viennent d'être l'objet de la part de leurs confrères de la Grande-Bretagne. Ils n'oublieront pas que dans ces moments de détresse et de deuil pour la pauvre Belgique si éprouvée, la noble Angleterre est venue au secours de leurs compatriotes dans un élan de générosité admirable dont ils lui sont profondément reconnaissants. Ils peuvent affirmer que de leur coté ils n'useront qu'avec la plus extrême délicatesse de la grande faveur qui leur a été accordée et prient leur chers confrères de vouloir bien agréer l'expression de leurs sentiments de gratitude et de chaleureuse confraternité.

The resolution is signed in behalf of the Belgian refugee doctors by Dr. Clément Philippe.

BELGIAN MEDICAL MEN AND PHARMACISTS.

The committee appointed to consider the position of Belgian doctors and pharmacists in Belgium has proceeded to work strenuously. All communications should be addressed to Dr. Sprigge, 423, Strand, London, W.C.

OBITUARY OF THE WAR.

RICHARD GEORGE KINKEAD, M.B. R.U.I.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain R. G. Kinkead, who was killed in action on Oct. 31st, was the only surviving son of Dr. R. J. Kinkead, professor of midwifery in University College, Galway. He received his school education in the Grammar School, Galway, and Portora Royal School, Enniskillen. He entered Queen's College, Galway, and received his professional education there and at the Richmond Hospital, Dublin. He received the medical degrees of the Royal University in 1908. After a year as assistant house surgeon in the Coventry and Warwickshire Hospital he obtained a commission in the Royal Army Medical Corps. When the war broke out he was stationed in South Africa. He was called to Europe for service, and left England for the front on Oct. 6th. He was attached to a Hussar regiment. In his last letter home, written five days before his death, he wrote with enthusiasm of the magnificent spirit of both officers and men. Kinkead was a most promising officer. With his father, one of the most respected men in the Irish profession, there is universal sympathy.

SYDNEY NELSON CROWTHER, M.R.C.S. ENG., L.R.C.P. LOND.

Mr. Sydney Nelson Crowther, senior assistant medical officer at the Surrey County Asylum, Netherne, Merstham, was killed in action whilst on service with the British Expeditionary Force as a motor-cycle despatch rider. He was the fourth son of the late Alfred Hallworth Crowther, a solicitor, and was born at Keston, Kent, in 1874. He was educated at Warwick School and at Westminster Hospital, where he acted as house physician and house surgeon. He went out to South Africa as a dresser in the Imperial British Yeomanry Field Hospital, receiving a medal with four clasps. He qualified at the English Conjoint Board in 1903. In 1906 he was appointed assistant medical officer at Brookwood, and in 1909 was appointed senior assistant medical officer at Netherne on the opening of that asylum. He was a man of exceptional capabilities, who will be much missed in the county of Surrey, especially as he had just been appointed to succeed Dr. F. C. Gayton, who was retiring from the post of superintendent. In addition to his medical capacities he was an ardent sportsman, having played at football for his county and the United Hospitals and the British Rugby team that toured round the world; he was also a good cricketer and golfer. On the outbreak of the present war he at once joined the Royal Engineers as a motor-cycle despatch rider, and was given the rank of corporal. He sailed for the front on Sept. 12th, and was killed in action on Oct. 18th. His death has cast a gloom over both Surrey asylums, where his kindly nature, generosity, and sportsmanlike qualities made him a general favourite.

CECIL TAYLOUR CONYNGHAM, M.B. DUB.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain C. T. Conyngham, who has been killed in action in East Africa, was the son of Mr. Henry Conyngham, a member of the well-known firm of chemists, Messrs. Hayes, Conyngham, and Co., of Dublin. He was educated at St. Andrew's College, Dublin, and Trinity College, Dublin. While in college he was a good all-round athlete. He was a successful sprinter; he swam for the college team; and he played in a team which won the Leicester Cup for the Wanderers' Football Club in 1906. He received his degrees in medicine and surgery in 1906, and soon obtained a commission in the Royal Army Medical Corps. When war broke out he was stationed in India, and he only left Bombay for East Africa on Oct. 16th.

THE BRITISH RED CROSS SOCIETY.—The summary of the work for the week ending Nov. 10th states that 359 hospitals have been accepted by the War Office, containing 11,730 beds, including 1495 beds accepted during the past week, and distributed among the army commands as follows: London 745, Southern 3487, Aldershot 633, Eastern 3437, Northern 1803, Western 1436, and Irish 189. A number of Red Cross Voluntary Aid Detachments are being utilised in connexion with these hospitals.

At the Netley Red Cross Hospital nine huts are occupied by sick and wounded, which includes 60 Indians. The pack store, steward's store, and dispensary are almost complete, thereby releasing the huts which have been used for these purposes. 300 beds are expected to be ready by the end of the week. Medical officers and nurses are going to their regular quarters, thus giving more huts for patients. The night orderlies' dormitory, bath-rooms, and extra stores have been completed and occupied. The large dining hall for patients will be finished in ten days. The patients in the hospital express themselves as comfortable and well satisfied. Sir Frederick Treves and Sir Benjamin Franklin visited and inspected the hospital. Two members of the Indian council have also inspected the Indian ward. For ambulance purposes 84 cars have been despatched to the front; four of these are in temporary use at Southampton and another at Oxford,

The following personnel has been despatched on the dates and to the places enumerated:—Boulogne, Nov. 4th, 1 surgeon. Boulogne, Nov. 5th, 5 surgeons and 5 dressers. Paris, Nov. 6th, 1 splint-maker. Boulogne, Nov. 9th, 11 dressers. Sir Henry Norman's Hospital, Nov. 10th, 1 doctor. Nov. 9th, 20 nurses despatched to France for Lady Norman's Hospital; 26 nurses sent to home hospitals.

The following stores have been despatched during the last week: 1939 cases to France and 1231 to various parts of England to 102 hospitals in all. Demands from Boulogne and Calais increase, but requisitions from Rouen are not so great owing to the good reserve stock. Applications for stores are now of a very varied nature, including foods of all kinds and medical requisites of every sort, resulting in the purchase of a large percentage of the supplies, which permits of drawing to a very small extent on stock. The necessity of the public subscribing money in lieu of goods is accentuated by recent requisitions.

Sir Frederick Treves states that owing to the generosity of Mr. Fielden the society has been able to acquire for an almost nominal sum the well-known steam yacht *Paulina*. The ship is 380 tons, draws $11\frac{1}{2}$ feet, and is capable of a speed of $11\frac{1}{2}$ knots. She has an admirable crew of 19 men. She is at this moment undergoing the process of being fitted for a hospital ship, and when complete will have 21 beds for private soldiers and three separate cabins for officers. She will carry a doctor and two orderlies.

The running expenses of the yacht are estimated at between £300 and £400 per month. It is the pleasure of Her Majesty Queen Alexandra that the yacht should be named *Queen Alexandra*. The yacht has received the necessary Admiralty warrant as a hospital ship, and will be ready to commence her work in about three weeks' time. She is lying at present at Itchen, Southampton.

FRENCH RED CROSS SOCIETY: THE NEED FOR MOTOR AMBULANCES.—We have received a communication, signed by the Duke of Portland (honorary president), Sir Francis Bertie, M. Paul Cambon, Lord Charles Beresford (chairman), and other members of the British Ambulance Committee, appealing for motor-cars for the French Red Cross Society. The Queen, Queen Alexandra, and the Prince of Wales have sent messages of encouragement to the committee, while the French Government through the French Ambassador in London has expressed hearty approval of the scheme. Moreover, the French Red Cross Society states that in many directions the ambulance transport of the French army has almost broken down. Cars should be lent to the French Red Cross Society through the committee for a minimum period of three months. A minimum expenditure of £50 upon each car supplied is necessary to convert it into an ambulance and complete its outfit, and the cost of maintenance is estimated at about £10 a week, so that those who may have no cars of their own to lend are requested to send subscriptions towards the first sum of £50,000 with which the committee propose to begin to carry out their purpose. Those who are willing to lend cars should communicate with the joint honorary secretary, Mr. B. Pegman, Queen's Mansions, Westminster, S.W. According to the statement of the committee France has already used up nearly all the motor-cars available for ambulance work, and the wounded of our gallant ally are suffering terribly owing to the consequent delay in transport from the front to the nearest available hospital. Now that the English people have done what was urgently necessary in this matter for our own army the committee hopes that its appeal for motor-cars and for funds for their upkeep will meet with an instant and generous response.

THE INDIAN ST. JOHN AMBULANCE ASSOCIATION AND THE EUROPEAN WAR.—One of our Indian correspondents writes as follows:—The St. John Ambulance Association is the only Red Cross Society in India, and has taken up with the greatest promptitude its duties in the present European crisis. The society has during the past five years built up a position as a national institution in India, and has established in this brief period no less than 300 centres in every corner of the great Indian Empire. The value of this well-thought-out organisation became at once apparent on the outbreak of the present war. Forty-eight hours after the news reached India a circular letter was issued to all centres of the association pointing out that England was now at war and that there was evidence of intense enthusiasm on the part of the public and a great desire to help our troops in the field. One of the most important functions of a Red Cross or ambulance society is to direct such patriotic enthusiasm into correct channels, and the letter suggested that centres of the association should form ladies' committees with the following objects—viz. (1) to collect funds; (2) to collect gifts of articles likely to be of use to troops on service; and (3) to collect material for ambulance detachments, should such be organised.

This letter was promptly followed by a meeting at the headquarters of the Indian Government. Addresses were made by Surgeon-General W. Babtie, Director of Medical Services in India, and Surgeon-General Sir C. Pardey Lukis, Director-General of the Indian Medical Service, outlining a scheme for the collection of gifts likely to be of use to troops on service. This was followed by the publication of a list of articles compiled by Surgeon-General Babtie in conjunction with the chief lady superintendent of the Queen Alexandra's Nursing Service. In a letter distributing these lists it was pointed out that they were mainly meant to supplement articles already provided by Government, and not to supply deficiencies. It had been found in practice very convenient that in the time of war both nurses and medical officers should have extra articles of this kind which are absolutely at their disposal without having to account for them officially. The Indian Council forthwith organised a depôt at Bombay, where all goods were received, classified, suitably packed, and handed over to the military authorities for despatch to our troops on active service. The railway authorities carry these Red Cross gifts from every part of India free of all charges.

With reference to personal service the Indian Council has under formation in every station in India Voluntary Aid Detachments, consisting of persons holding its certificates. These detachments consist of (*a*) a commandant who is, if possible, a medical practitioner; (*b*) at least two men trained in first aid; and (*c*) seven women who must hold both the first aid and nursing certificates. This personnel is recognised, registered, and inspected by the military authorities, and the Director of Medical Services in India is prepared to employ them at railway rests, camps, &c. The ladies' committees of the St. John Ambulance Association in India are only concerned with the sick and wounded, as the provision of gifts and comforts for actual combatants, however laudable, is no concern of a Red Cross Society. The response to the appeal from all parts of India has been so remarkably prompt that Surgeon-General Babtie has decided to revise the list of articles sent and has framed a list of what are now called replacement units for ten beds. These units contain all articles which it is necessary to repeat or replace. In addition to the hospitals in the theatre of war there will be hospital ships plying regularly between Bombay and Europe as well as ambulance trains in India which will require comforts on a special scale. The association, moreover, will be required probably to provide comforts for rest camps and rest stations on the railways. In addition to the ordinary units the Indian branch of the association has designed what is called the Red Cross bag, containing comforts for *invalided* British and Indian soldiers when they leave hospital. It will be gathered from the foregoing that the Red Cross services in India will not end till the war does. The association's system of providing gifts and comforts for the troops, British and Indian, has received the approval of both the Viceroy and the Commander-in-Chief, and it has also been asked to assist the military authorities in obtaining recruits for the Army Bearer Corps during the war, and has been very successful in this direction. Indeed, the services of the St. John Ambulance Association have become so valuable to the Government of India and military authorities that Major R. J. Blackham, honorary general secretary of the association, for some six years has been placed on special duty by the Commander-in-Chief to direct and control all Red Cross work in India. This is probably the highest recognition any similar society has attained.

RED CROSS ACTIVITY IN DUBLIN.—Our Dublin correspondent writes:—For some weeks past there has been in existence a County Dublin branch of the British Red Cross Society which has been working in conjunction with the St. John Ambulance Association. At a public meeting held last Monday in the theatre of the Royal Dublin Society, the Lord Mayor presiding, it was decided to form a branch for the city of Dublin. Her Excellency the Countess of Aberdeen was elected president, and various officers and committees were appointed. Collections in aid of the funds of both county and city branches are to be made in the streets of Dublin on Nov. 14th. Lady Aberdeen has sketched a new scheme of activity for Red Cross workers in Dublin. She suggests the establishment of a hospital which might be furnished by those interested in Red Cross work, and which would give an opportunity of extending the training of women holding first-aid and nursing certificates. In the daily papers of Nov. 10th Sir Thomas Myles makes a somewhat similar proposal. He draws attention to the fact that the recent arrivals of wounded soldiers from France have taxed the Dublin general hospitals to their full capacity, unless serious inroads are to be made on the accommodation normally required for the civil population. He suggests the immediate erection of a wooden or iron temporary hospital in the Phœnix Park, capable of holding 1000 beds. It should be divided into blocks with not more than 200 beds in each. There are many Dublin surgeons who would willingly undertake the surgical work gratuitously, if the Government employed a reasonable number of young men as house surgeons. The control of the nursing should be in the hands of trained nurses, and under them the general nursing could be undertaken by the women who for some months past have been undergoing voluntary training in hospitals to prepare them for emergency work.—The *Oxfordshire* hospital ship arrived in Dublin last week with some 700 wounded officers and men, most of whom were accommodated in the hospitals of Dublin, military and general. The cases are, speaking generally, more serious than those received earlier. The great majority of the patients are suffering from septic wounds, more or less serious, but comparatively few show any signs of general sepsis. The infection generally appears to be of staphylococcus aureus, though a certain number of wounds have bacillus pyocyaneus present.

WOUNDED SOLDIERS AT BELFAST.—The first party of wounded soldiers allocated to Belfast arrived on the evening of Nov. 5th. The Bibby liner *Oxfordshire* brought 700 British wounded from Boulogne to Dublin on the morning of Nov. 5th, and about 150 of these were sent northward by means of the new finely-equipped ambulance train, which was specially built—since the war began—by the Great Northern Railway Company of Ireland. About 20 of the less serious cases were taken *viâ* Portadown to Omagh; the remainder came on to Belfast, where 65 of them found accommodation in the Royal Victoria Hospital; 20 were taken to the military hospital at Victoria Barracks; while the balance were sent by motor car to Downpatrick. The most ample preparations were made at the Great Northern terminus, Belfast, for the reception and transference of the patients to the hospital. A large number of private motor cars were placed at the service of the Royal Army Medical Corps, in addition to motor ambulances of the corporation, the Red Cross Society, and the Ulster Volunteer Force, and the patients were rapidly and easily removed to the hospitals. A number of ladies provided hot soup and cigarettes, &c., for the wounded while at the Belfast station, which were greatly enjoyed. The majority of the soldiers wounded got their injuries recently in the Ypres district. At the Royal Victoria Hospital the men say their injuries were, as a rule, caused by shrapnel or rifle bullets. They speak highly of the artillery of the Germans, but think little of the enemy as a fighting individual. One man has lost an eye, another has a serious injury to the hip-joint, another has a bad smash of one shoulder-joint, another has been shot through the cheek, others in the knee, foot, and arm. All are cheerful, most modest in their description of their experiences, and very grateful for any attention. Numerous X ray photographs indicate the lesions and the presence of the shrapnel.

MEDICO-MILITARY NOTES FROM AMERICA.—In the October issue of the *Military Surgeon*, published in Chicago, Captain W. H. Crum, Medical Corps, U.S. Army, discusses the physique of the Medical Corps orderly, the stretcher bearer, or as he, following continental practice, names him, "the sanitary soldier." The physical toil of carrying men off the field on stretchers is very exacting. Captain Crum points out that the bigger and stronger the stretcher bearers the more quickly will the work be done. He set two squads each to carry a man of $11\frac{1}{2}$ st. on a stretcher twice round a half-mile racecourse. One squad averaged 5 ft. 10 in. and $13\frac{1}{2}$ st.; the other pair 5 ft. $7\frac{1}{4}$ in. and 10 st. 5 lb. The shorter pair did the first circle in $12\frac{1}{2}$, the second in $14\frac{1}{2}$ minutes and changed ends nine times; the bigger men did the first circle in 9, the second in 12 minutes and exchanged places five times. The big men did a quarter more work in the same time. Therefore Captain Crum desires to see big, powerful men enlisted in the sanitary corps, men, he says, "as good as those of the Mountain Artillery," evidently a corps d'élite in the United States. Still, that army which has in the firing line all its most powerful soldiers will probably secure that its enemy has the most wounded, and that its own less powerful orderlies have less call made upon their services. Major A. E. Truby, Medical Corps, U.S. Army, tells how to provide hot water easily and in plenty in camp. Alongside the destructor, whose fire is always alight, there is a water barrel, from the bottom whereof a three-quarter inch pipe leads to the destructor, takes a complete turn round within the fire, and leads back to the barrel some 8 inches above the bottom. This is an adaptation of the ordinary method of household hot water heating used in Canada and the United States. The description is clear and well illustrated, the apparatus, given the barrel and the destructor, quite easy to instal. Lieutenant DeLanney, describing the giving of ipecacuanha for dysentery, first secures his patients against the distressing nausea by putting 15 grains of the powder into gelatine capsules which he has soaked for some hours in 20 per cent. formaldehyde solution and has afterwards dried. Major Reno, who devotes much attention to the improvement of the military efficiency of the Medical Corps, recommends a sort of metal thimble to fit over the head of tent pegs to prevent their splitting when being driven. It could not be but very useful if always at hand. The Schäfer method of artificial respiration[1] has been officially adopted in the United States Army. There is translated the discussion of agglutination phenomena in 144 cases of paratyphoid B infection in Japanese sailors and soldiers already immunised, all of them, against typhoid fever. In most cases the paratyphoid B agglutination was in a weaker dilution than the Widal. Sometimes, however, they occurred only in similar dilutions, and at times this position was reversed. Numerous abstracts of papers are presented from all the medical military journals of the world. On the whole, they suggest that the work of the medical officer at the front is chiefly sanitary and preventive, and that anything beyond first aid to the wounded must be done by surgeons on the line of communications, and that, if possible, serious operations should be undertaken only in the base hospitals.

WOUNDED SOLDIERS IN SCOTTISH HOSPITALS.—Another hospital train arrived in Edinburgh on Nov. 5th. The men were sent to the different hospitals—Craigleith, the Royal Infirmary, and Dalmeny. The men had come straight from the firing line, and among those who were sent to Dalmeny were two of the London Scottish who had been in the first great charge made by Territorials. From the nature of the wounds, as these are compared with those of the first contingent, the close and bloody nature of the recent struggles at the front may be realised. Among the first contingent practically all the wounds had been caused by shrapnel. So far as the contingent which arrived on the 5th were concerned, shrapnel wounds were few, and there is eloquent testimony to recent infantry struggles in the fact that practically 90 per cent. of the wounds are due to rifle bullets.

MANCHESTER IN WAR TIME.—Our own correspondent writes as follows concerning university and medical matters: "Naturally, the outbreak of war has had an effect on the attendance at the University. On the whole there is a diminution of about 25 per cent. so far as entries are concerned. As to the medical school itself, the following is approximately correct. As compared with the corresponding period last year there are between 60 and 70 fewer students on the register of the medical school. The number of new entries in medicine for the degree and other qualifications shows an increase over last year's figures. There is a diminished entry for dental qualifications, as well as for the diploma of Public Health and that of Veterinary State Medicine. The University has offered hospitality to two medical students from the University of Ghent. These students are pursuing their studies in the medical school. The professorial staff is doing its best to arrange for the reception of professors and their relatives who have been obliged to leave Belgian universities. It is stated that Professor Boycott will in due time proceed to take up an appointment in London, so that by and by there will again be a change in the pathological department of the University. Over 4000 wounded—English, Belgian, and a few German soldiers—have been received at the Manchester or Western Base Hospital. Over 1100 have been dealt with in the Manchester, Salford, and adjoining hospitals; some have been sent to hospitals in neighbouring towns. The Lancashire towns—in spite of great depression in the cotton trade—are making and have made strenuous endeavours to accommodate both the wounded and the numerous Belgian refugees who have reached Manchester. On Nov. 10th there was a public funeral of seven brave Belgians who had died in the local hospitals as the results of injuries received in the battles in Flanders."

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[1] THE LANCET, March 27th, 1909, p. 895.

PROHIBITED EXPORTS.—In a Prohibition Order issued as a supplement to the *London Gazette* of Tuesday, Nov. 10th, there is included, besides military articles and the raw materials out of which explosives can be made, a long list of drugs. Notable amongst those which are forbidden to be exported to all destinations are acetanilide, acetylsalicylic acid, aconite, antipyrin, antimony, chloral, carbolic acid, collodion, veronal, formic aldehyde, hydrobromic acid, emetine hydrochloride, ergot, opium, phenacetin, potash salts, sulphonal, and tartaric acid. Chloroform and ether are not included, but methyl alcohol and spirits are. Amongst the drugs forbidden to be exported to all foreign ports except those of France, Russia, Belgium, Spain, and Portugal are bismuth salts, camphor, castor oil, iodine, mercury salts, picric acid, sulphur, and sulphuric acid. The Prohibition Order applying to all destinations abroad other than His Majesty's dominions includes certain provisions and victuals—e.g., living animals (for food purposes), barley, oats, butter, cheese, eggs, margarine, wheat and wheat flour, and woollen goods and clothing. Sugar is prohibited to all destinations other than the Channel Islands, Malta, Gibraltar, the Falkland Islands, St. Helena, the East Africa Protectorate, and the British West African Colonies and Protectorates.

FIRE PRECAUTIONS IN EMERGENCY HOSPITALS AND REFUGEE HOSTELS.—A free public issue is now being made by the British Fire Prevention Committee of the necessary "fire warnings" for emergency hospitals, convalescent homes, and refugee hostels. These "warnings" take the form of a small red poster measuring 8 in. by 20 in., embodying useful reminders and hints as to matches, smoking, illuminants, open fires, stoves, and the use of spirit, celluloid, and similar dangerous substances. Copies are supplied upon written application to the Registrar of the Committee, 8, Waterloo-place, Pall Mall, S.W., stating the number of beds or number of refugees which the applicant has to deal with. Summarised translations in the Flemish and French languages on posters of a somewhat smaller size will also be provided on request by the British Fire Prevention Committee.

GERMAN TREATMENT OF TETANUS.—Professor Weintraud, of Wiesbaden, refers in the *Berliner Klinische Wochenschrift* of Oct. 19th to the increasing occurrence and heavy mortality from tetanus in war time. He advocates the following course of treatment. 1. Prophylactic serum injection for all suffering from wounds contaminated by mud or earth. 2. Careful observation of slight initial symptoms and "localised" tetanus. 3. Open antiseptic treatment of wounds. 4. Injection of 100 units of antitetanic serum once or twice on the outbreak of symptoms. 5. Consecutive use of a 15 per cent. solution of sulphate of magnesia in doses of 5 to 10 grammes to be injected into the spinal canal, after a corresponding amount of fluid has been let out. The treatment must be conducted in hospital wards and supervised carefully by several physicians. Three cases thus treated in Wiesbaden all recovered.

THE London School of Tropical Medicine will be pleased to offer the hospitality of the school to any Belgian medical graduate who may desire board and residence while prevented from returning to his own country. The committee will also be pleased for any graduate residing with them to attend the classes of the school.

WOUNDED IN UNIVERSITY COLLEGE HOSPITAL, LONDON.—University College Hospital, as a section of Queen Alexandra's Military Hospital, provides 100 beds for sick and wounded soldiers. All these beds are now fully occupied by patients drafted during the past two weeks from the base hospitals in France. A large number of regiments are represented, and there are in addition about 20 Belgians.

BRITISH AMBULANCE FOR SERBIA.—At the close of last week, according to the Malta correspondent of the *Morning Post*, a British transport reached that island from England, having on board a British ambulance party for Serbia, consisting of 31 medical men and 27 nurses, with 12 orderlies, under Professor J. T. J. Morrison, senior surgeon to the Queen's Hospital, Birmingham. The party has been organised by the Serbian Relief Fund in London with the assistance of the Order of St. John of Jerusalem.

Medical News.

UNIVERSITY OF CAMBRIDGE.—Dr. H. K. Anderson, F.R.S., Master of Gonville and Caius College, has been re-elected to the Council of the Senate of the University for the ensuing two years.—The special Board for Medicine has presented a report on the relation of Addenbrooke's Hospital, and the teaching of clinical medicine and surgery, to the proposed grant from the Board of Education to the medical school of the University.—Mr. Colin Mackenzie, Emmanuel College, has been approved for the degree of Doctor of Medicine *in absentia*.—Mr. John Richardson Marrack, M.B., B.C., has been elected to a Fellowship at St. John's College.

UNIVERSITY OF EDINBURGH.—The following scholarships and bursaries in the Faculty of Medicine of Edinburgh University have been awarded: Crichton research scholarship in anatomy to Stuart Bolton, M.B., Ch.B.; Vans Dunlop scholarship in anatomy to Robert Walker; Vans Dunlop scholarship in physiology to Robert Mailer; Houldsworth scholarship in pharmacology to Benjamin J. Ryrie; Grierson bursary in anatomy and physiology to Andrew O. Ross; Grierson bursary in pathology to Andrew J. Caird, M.A.; Crichton bursary in preliminary subjects to James McNabb, M.A., B.Ch.; and the Mackie bursaries to William B. Ross and Robert McGarrol.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $250, will be made on July 14th, 1915, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten, and if written in a language other than English should be accompanied by an English translation, and must be received by the secretary of the College, Mr. Francis R. Packard, 19, South 22nd-street, Philadelphia, on or before May 1st, 1915. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. The successful essay or a copy of it will remain in possession of the College; other essays will be returned upon application within three months after the award. The Alvarenga prize for 1914 has been awarded to Dr. H. B. Sheffield, New York City, for his essay entitled "The Fundamental Principles Involved in the Use of the Bone Graft in Surgery."

UNIVERSITY OF LONDON.—At the meeting of the Senate on Oct. 21st the Vice-Chancellor, Sir Wilmot Herringham, was granted leave of absence for as long as might be necessary during his appointment as consulting physician with H.M. Forces at the seat of war; and the Dean of the Faculty of Medicine, Sir Alfred Pearce Gould, was appointed to act for the Vice-Chancellor during his absence. Various resolutions in respect of the war were passed by the Senate, including amendments to the regulations for medical degrees, enabling students to count service with the Forces, or in hospitals or Red Cross detachments recognised by the naval or military authorities, as equivalent to hospital practice. An addition was also made to the Regulations for the M.D. and M.S. degrees, authorising a temporary commission during the war in the Royal Army Medical Corps or Royal Naval Medical Service to be held equivalent to an "approved appointment." Dr. E. Graham Little has been reappointed a member of the committee of the Chelsea Physic Garden; Sir David Ferrier has been elected chairman of the Physiological Laboratory Committee of the University; and Sir Alfred Pearce Gould has been re-elected Dean of the Faculty of Medicine for the period 1914–16. A University Medal has been awarded to John Lloyd Davies, B.S., on the result of the July examination for the M.D. degree (Branch I., medicine). On account of the war it has been decided to postpone the advanced courses in physiology, but the inter-collegiate courses in physiology will be given as announced.

On the occasion of the opening of Parliament on Wednesday the address in reply to the speech from the Throne was moved in the House of Commons by Sir Robert J. Price, M.P., who became a Member of the Royal College of Surgeons of England in 1876, and has represented the East Norfolk Parliamentary division for the past 22 years.

Royal College of Surgeons of England.—The annual general meeting of Fellows and Members will be held at the College, Lincoln's Inn-fields, W.C., on Thursday next, Nov. 19th, at 3 o'clock. A resolution will be moved by Sir Victor Horsley, and seconded by Mr. George Jones, affirming the desirability of admitting Members to direct representation on the Council of the College.

Medico-Psychological Association of Great Britain and Ireland.—The next general meeting of this association will be held on Tuesday, Nov. 24th, at 3.30 P.M., at 11, Chandos-street, Cavendish-square, London, W., under the presidency of Dr. David G. Thomson. The usual quarterly dinner will not take place.

Medico-Legal Society.—A meeting of this society will be held at 11, Chandos-street, Cavendish-square, London, W., on Tuesday next, Nov. 17th, at 8.30 P.M. After an exhibition of specimens the President, Professor Harvey Littlejohn, will deliver an address, and Dr. Andrew Balfour, C.M.G., will describe Medico-legal Experiences in the Sudan.

National University of Ireland.—At the last meeting of the Senate of the National University of Ireland Dr. Joseph F. O'Carroll was elected to succeed the late Sir Christopher Nixon in the chair of medicine in University College, Dublin. Dr. O'Carroll had been assistant to the professor of medicine since the foundation of the University. At the same meeting Dr. John P. Henry was elected professor of ophthalmology and otology in University College, Galway; Dr. Adeline English lecturer in mental diseases; and Professor W. W. Brereton lecturer in operative surgery in the same college.

St. Luke's International Hospital at Tokyo.—It is reported that the Emperor of Japan has made a donation of £10.000 towards the foundation of St. Luke's International Hospital at Tokyo, promoted by the Episcopal Mission. The gift was announced by Count Okuma, the well-known statesman and leader of the Progressive Party, at a luncheon at which a number of prominent residents of Tokyo were present. The British Ambassador and the United States Ambassador supported the scheme, which is to cost £200,000. The interest shown by the Imperial Court towards the work of charity is conspicuous. The Court while professing neither Buddhism nor Christianity has given liberal donations to Christian and Buddhist philanthropic undertakings. The Japanese Red Cross Society, which assumed its present name in 1886 when Japan joined the Geneva Convention (although a forerunner of the society was started in 1877), is under the special patronage of the Imperial family, and the benevolence of the Court has been also extended to other works of practical charity.

The Protection of Hospital Buildings from Fire.—The hospitals and schools committee of the National Fire Brigades' Union have issued four pamphlets containing suggested precautions against fire and for extinguishing fire. These pamphlets deal respectively with hospitals, public schools, boarding schools, and elementary schools. No. 1, a copy of which has been sent to us, refers to fires in hospitals and ought to be in the hands of everyone connected with hospital administration whatever capacity he may hold; for just as the prompt rendering of first aid, pending the arrival of more skilled help, may save the life of a patient, so a knowledge of the right thing to do on the first alarm of fire may prevent a serious catastrophe. We note with approval that the union has offered to examine the staffs of hospitals and schools who are trained in fire drill and have decided to give any information or assistance, with the establishment of gear, &c., for the protection of life and property. Further information can be obtained from the offices of the union, 22, Northumberland-avenue, London, W.C.

The anniversary dinner of the Royal Society, which is ordinarily held on St. Andrew's Day (Nov. 30th), will not take place this year.

We regret to announce the death at the comparatively early age of 56 of Dr. Angelo Celli, professor of State Medicine in the University of Rome and director of the Hygienic Institute attached to the Medical Faculty.

A Centenarian.—Through Commander R. R. Hubbard, R.N.R., His Majesty the King has sent his congratulations to Captain Daniel Jackson, of Tooting, who will celebrate the 107th anniversary of his birthday on Nov. 20th.

Royal Faculty of Physicians and Surgeons.—At the annual meeting of Fellows of the Royal Faculty of Physicians and Surgeons of Glasgow Dr. John Barlow, senior surgeon to the Glasgow Royal Infirmary, was re-elected president.

BOOKS, ETC., RECEIVED.

Baillière, Tindall, and Cox, London.

Indispensable Orthopædics: A Handbook for Practitioners. By F. Calot, Chief Surgeon to the Hôpital Rothschild. Translated from the sixth French edition by A. H. Robinson, M.D., M.R.C.S., and Louis Nicole. 8 plates and 1250 illustrations. Price 21*s.* net.

Rose and Carless's Manual of Surgery. Ninth edition. Revised by Albert Carless, M.D., M.S. Lond., F.R.C.S. Price 21*s.* net.

Chapman and Hall, London. John Wiley and Sons, New York.

A Text-book of Physiological Chemistry. By Professor Olaf Hammarsten (Upsala), with the collaboration of Professor S. G. Hedin (Upsala). Authorised translation from the author's enlarged and revised eighth German edition by John A. Mandel, Sc.D., Professor of Chemistry, New York University. Seventh edition. Price 17*s.* net.

Constable and Company, London.

On Pharmaco-Therapy and Preventive Inoculation Applied to Pneumonia in the African Native, with a Discourse on the Logical Methods which ought to be Employed in the Evaluation of Therapeutic Agents. By Sir Almroth E. Wright, M.D., F.R.S. Price 4*s.* 6*d.* net.

Green, W., and Son, Edinburgh and London.

Essentials of Human Physiology. By D. Nöel Paton, M.D., B.Sc. F.R.C.P. Ed., F.R.S. Fourth edition, revised and enlarged. Price 12*s.* net.

Heinemann, William, London.

A Short Handbook of Cosmetics. By Dr. Max Joseph, Berlin. Second edition, revised, with appendix. Price 2*s.* 6*d.*

Kimpton, Henry, London and Glasgow.

Local Anæsthesia: its Scientific Basis and Practical Use. By Professor Dr. Heinrich Braun. Translated and edited by Percy Shields, M.D., A.C.S., Cincinnati, Ohio. From the third revised German edition. Price 21*s.* net.

Operative Surgery of the Nose, Throat, and Ear. By Hanau W. Loeb, A.M., M.D., Professor of Ear, Nose, and Throat Diseases in St. Louis University, in collaboration with others. In two volumes. Price £2 10*s.* net. Vol. I. Vol. II. ready shortly.

A Text-book of Practical Therapeutics. By Hobart Amory Hare, M.D., B.Sc. Fifteenth edition, enlarged, revised, and largely rewritten. 144 engravings and seven plates. Price 21*s.* net.

Life: Its Origin and Energy Mechanism. By Jadroo. Price 1*s.* net.

The Tonsils—Faucial, Lingual, and Pharyngeal. With some Account of the Posterior and Lateral Pharyngeal Nodules. By Harry Barnes, M.D. (Instructor in Harvard Medical School). Price 12*s.* 6*d.*

Quain's Elements of Anatomy. Eleventh edition. Vol. II., Part 2. Splanchnology. Edited by J. Symington, M.D., F.R.S., Professor of Anatomy in the Queen's University of Belfast. Price 10*s.* 6*d.* net.

Lewis, H. K., London.

Lead Poisoning from the Industrial, Medical, and Social Points of View. Lectures delivered at the Royal Institute of Public Health. By Sir Thomas Oliver. M.A., M.D., F.R.C.P. Price 5*s.* net.

Longmans, Green, and Co., London.

The Essentials of Physiology. By F. A. Bainbridge, M.A., M.D. Cantab., F.R.C.P., Professor of Physiology, University of Durham; and J. Acworth Menzies, M.D. Edin., Lecturer on Physiology, University of Durham College of Medicine. Price 10*s.* 6*d.* net.

Macmillan and Co., London.

Mothercraft for School Girls. By Florence Horspool, L.O.S., C.R.S.I., Inspector of Midwives, Swansea. With a Preface by Lady Mond. Price 1*s.*

Zoological Philosophy: An Exposition with regard to the Natural History of Animals. By J. B. Lamarc. Translated, with an introduction, by Hugh Elliot. Price 15*s.* net.

Published by Author at 4, London Wall Buildings, E.C.

History and Romance of the Petroleum Industry. By J. D. Henry Vol. I. Price 10*s.* (To be completed in three or more volumes.)

SAMPSON LOW, MARSTON, AND CO., London.

Low's Handbook to the Charities of London, 1914. Price 1*s*. net.

SAUNDERS (W. B.) COMPANY, London and Philadelphia.

A Text-book of Medical Diagnosis. By James M. Anders, M D., Ph.D., LL.D., and L. Napoleon Boston, A.M., M.D. Second edition, thoroughly revised, with 500 illustrations. Price 25*s*. net.

A Manual of Normal Histology and Organography. By Charles Hill, Ph.D., M.D., Professor of Histology and Embryology, Chicago Veterinary College. Third edition, thoroughly revised. Price 10*s*. 6*d*. net.

SMITH, ELDER, AND CO., London.

The Pastor's Wife. By the author of Elizabeth and her German Garden. Price .

THE SCIENTIFIC PRESS, LIMITED, London.

Standard Prescriptions for Insurance Practice. Compiled by C. H. Gunson, M.B., Ch.B. Price 1*s*. net.

Practical Medical Electricity. A Handbook for House Surgeons and Practitioners. By Alfred C. Norman, M.D. Edin. Illustrated. Price 5*s*. net.

UNWIN, T. FISHER, London.

The Story of Bethlehem Hospital from its Foundation in 1247. By Edward Geoffrey O'Donoghue, Chaplain to the Hospital. 140 illustrations. Price 15*s*. net.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol.

Obiter Scripta: Throat, Nose, and Ear. By A. R. Friel, M.A., M.D., Honorary Physician for the Throat, Nose, and Ear, General Hospital, Johannesburg. Price 2*s*. 6*d*. net.

Urgent Surgery. By Félix Lejars. Professeur Agrégé à la Faculté de Médecine de Paris. Translated from the seventh French edition by William S. Dickie, F R C S., Surgeon, North Riding Infirmary. With 20 plates and 1086 illustrations. Vol. I.: Introductory, Head, Neck, Chest, Spine, and Abdomen. Price 25*s*. net.

YALE UNIVERSITY PRESS. HUMPHREY MILFORD, London; and OXFORD UNIVERSITY PRESS.

The Mental Health of the School Child. The Psycho-Educational Clinic in Relation to Child Welfare. Contributions to a New Science of Orthophrenics and Orthosomatics. By J. E. Wallace Wallin, Ph.D., Professor of Clinical Psychology in the University of Pittsburg. Price 8*s*. 6*d*. net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARCLAY, R. MARY, M.B., Ch.B., has been appointed Clinical Assistant in the Ear and Throat Department at the Edinburgh Royal Infirmary.

BOUSER, G. A. G., M.R.C.S., L.R.C.P. Lond., has been appointed to the Children's Surgical Department at St. Thomas's Hospital.

BURT, W., M.R.C.S., L.R.C.P. Lond., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

CRANSTOUN, G., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital.

DAWSON, H. P., M B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

FELL, A. N., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Colchester District of the county of Essex.

GIMBLETT, C. L., M.R.C.S., L.R.C.P. Lond., has been appointed to the Neurological Department at St. Thomas's Hospital.

MILLIGAN, HENRY JOSEPH, M.B., Ch.B. Glasg., D.P.H. Cantab., has been appointed Tuberculosis Officer and Deputy Medical Officer of Health for the Borough of Bootle.

PHILIP, WILFRID PATON, M.B., Ch.B. Aberd., has been appointed Resident Medical Officer to the Corporation Hospital and Assistant Tuberculosis Officer to the Borough of Bootle.

ROMANIS, W. H. C., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Ear Department and in the Throat Department at St. Thomas's Hospital.

SAI, P., M.R.C.S., L.R.C.P. Lond., has been appointed to the Children's Surgical Department at St. Thomas's Hospital.

SHARP, J. E., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital.

TAYLOR, JOHN MAXWELL, M.B., Ch.B Aberd., D.P.H., has been appointed Assistant Medical Officer of Health and Medical Inspector of Scholars for the Borough of Bootle.

TINDAL-ATKINSON, W. P., M.R.C S., L.R.C.P. Lond., has been appointed Radiographer to the Royal Westminster Ophthalmic Hospital.

WEAR, A. HYDE, M.B., B.S. Durh., D.P.H., B.Hy., has been appointed Assistant Medical Officer of Health and Assistant School Medical Officer to the County Borough of South Shields.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ALTON, HANTS, LORD MAYOR TRELOAR CRIPPLES' HOSPITAL AND COLLEGE.—Two Female Assistant Medical Officers for six months. Salary at rates of £120 and £100 per annum, with board, residence, and laundry.

BARNET, CLARE HALL SANATORIUM, South Mimms.—Assistant Resident Medical Officer.

BELFAST MUNICIPAL SANATORIUM, Whiteabbey.—Resident Medical Superintendent. Salary £500 per annum, with board and residence.

BETHNAL GREEN INFIRMARY, Cambridge-road, N.E.—Two Assistant Medical Officers. Salary at rate of £200 per annum, with apartments, board, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

BIRKENHEAD UNION INFIRMARY.—Female Resident Assistant Medical Officer. Salary at rate of £150 per annum, with board, washing and apartments.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

BIRMINGHAM CITY HOSPITAL, Lodge-road.—Assistant Resident Medical Officer. Salary £200 per annum, with board, residence, &c.

BIRMINGHAM, CITY OF.—Assistant Medical Officer of Health. Salary £300 per annum.

BIRMINGHAM, WEST HEATH SANATORIUM AND HOSPITAL.—Medical Superintendent, unmarried. Salary at rate of £300 per annum, with board and residence.

BIRMINGHAM, YARDLEY-ROAD SANATORIUM AND ANTI-TUBERCULOSIS CENTRE.—Third Assistant Medical Officer. Salary £200 per annum, with board and residence.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRISTOL GENERAL HOSPITAL.—Obstetric Officer and House Surgeon to Special Departments for six months. Salary at rate of £120 per annum, with board, residence, &c.

BURNLEY, VICTORIA HOSPITAL.—Second House Surgeon. Salary £135 per annum, with residence, board, and washing.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—House Surgeons for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

CARDIFF, KING EDWARD VII. WELSH NATIONAL MEMORIAL ASSOCIATION.—Assistant Tuberculosis Physicians. Salary £300 per annum.

CHESTER COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Second House Surgeon. Salary £150 per annum, with board, apartments, and laundry.

CITY OF WESTMINSTER UNION INFIRMARY, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—Junior House Surgeon. Salary £100 per annum, with rooms, board, washing, and attendance.

DERBY BOROUGH ISOLATION HOSPITAL AND SANATORIUM.—Resident Medical Officer. Salary £200 per annum, with board and residence.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £120 per annum, with board, residence, attendance, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

FAREHAM, HANTS COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

GATESHEAD ASYLUM, Stannington, Northumberland. — Assistant Medical Officer, unmarried. Salary £220 per annum, with rooms, board, and laundry.

GLAMORGAN COUNTY COUNCIL.—Medical Officer for Inspection of Children in Public Elementary Schools. Salary £300 per annum.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Anæsthetist. Salary 10 guineas per annum.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £200 per annum, with board, lodging, and washing.

HALIFAX UNION POOR-LAW HOSPITAL, Salterhebble. — Resident Medical Officer. Salary £120 per annum, with apartments, rations, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton. —House Physician for six months. Salary 30 guineas.

HUDDERSFIELD ROYAL INFIRMARY.—Senior and Junior Assistant House Surgeons. Salary £80 per annum each, with board, rooms, and washing.

HUDDERSFIELD, STORTHES HALL ASYLUM, Kirkburton.—Assistant Medical Officer. Salary £230 per annum, with rooms, board, attendance, and washing.

HULL ROYAL INFIRMARY.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

LEEDS EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £300 per annum.

LEICESTER ROYAL INFIRMARY.—Two Resident Assistant House Surgeons.

LIVERPOOL, BOARD OF CONTROL.—Assistant Medical Officer for State Institution for Mental Defectives near Liverpool. Salary not less than £300 per annum, with unfurnished house.

LIVERPOOL UNIVERSITY.—Assistant Lecturer and Demonstrator in Anatomy. Salary £175 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W—Female Assistant Resident Medical Officer. Salary at rate of £120 per annum, with board, residence, and laundry.

LOWESTOFT AND NORTH SUFFOLK HOSPITAL.—House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and laundry.

MACCLESFIELD GENERAL INFIRMARY.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

MAIDSTONE, KENT COUNTY ASYLUM.—Female Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, quarters, attendance, washing, &c.

MANCHESTER, CITY OF.—Assistant Tuberculosis Officer. Salary £350 per annum.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer for Crossley Sanatorium, Delamere Forest, Cheshire. Salary £100 per annum, with board, apartments, and laundry.

MANCHESTER INSTITUTION HOSPITALS, DR. RHODES MEMORIAL HOME, TEMPORARY HOSPITAL FOR CHILDREN, AND NEW CHILDREN'S HOSPITAL, &c., West Didsbury.—Medical Officer. Salary £700 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER, PRESTWICH UNION INFIRMARY, Charlestown-road, Blackley.—Second Assistant Resident Medical Officer. Salary £140 per annum, with board and apartments.

MANCHESTER ROYAL EYE HOSPITAL —Junior House Surgeon. Salary £80 per annum, with residence, board and washing.

MANCHESTER, VICTORIA MEMORIAL JEWISH HOSPITAL, Cheetham.—Female Resident Medical Officer for six months. Salary at rate of £80 per annum, with rooms, board, and laundry.

METROPOLITAN ASYLUMS BOARD INFECTIOUS HOSPITALS SERVICE.—Assistant Medical Officers, unmarried. Salary £250 per annum, with board, lodging, and washing.

MIDDLESBROUGH EDUCATION COMMITTEE.—School Dentist. Salary £250 per annum.

MIDDLESBROUGH, NORTH ORMESBY HOSPITAL.—House Surgeon. Salary £120 per annum, with board, washing, and attendance.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Junior House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and laundry.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Northwood.—House Physician. Salary £100 per annum, with board, residence, and washing.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W.—Honorary Assistant Physician for Out-patients. Also Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence and washing.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Senior and Junior House Physicians. Salary £50 per annum each, with board and residence.

NEW HOSPITAL FOR WOMEN, Euston-road —Female House Physician. Two House Surgeons, and Obstetric Assistant. Board, lodging, and laundry provided. Also Assistant Pathologist. Salary £50 per annum. Also Resident Medical Officer for House of Recovery, New Barnet. Salary £60 per annum. All for six months.

NEWPORT (MON.) ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

NORTHAMPTON COUNTY BOROUGH.—Clincal Tuberculosis Officer (temporary). Salary £350 per annum.

NOTTINGHAM CHILDREN'S HOSPITAL.—Female House Surgeon for six months. Salary at rate of £130 per annum, with apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £250 per annum, with apartments (not board), attendance, light, and fuel.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £100 per annum, with board, residence, and laundry. Also Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

OLDHAM ROYAL INFIRMARY.—Third House Surgeon for six months. Salary at rate of £100 per annum, with board and residence.

PRESTON ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

RICHMOND, SURREY ROYAL HOSPITAL.—House Surgeon. Salary at rate of £100 per annum for first month, £150 afterwards, with board, residence, and washing.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East.—Milroy Lecturer for 1916.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Election to Court of Examiners. Also Examiner in Physiology.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Two Refraction Assistants. Salary at rate of £50 per annum.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street West Strand, W.C.—Clinical Assistants for six months.

ST. PANCRAS SOUTH INFIRMARY, Pancras-road, N.W.—Senior Assistant Medical Superintendent and Senior Assistant Medical Officer of House adjacent. Salary at rate of £225 per annum, with board, apartments, and washing.

SALFORD ROYAL HOSPITAL.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

SALFORD UNION INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD, EAST-END BRANCH OF THE CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board and residence.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—Two House Surgeons and Assistant House Physician for six months. Salary £100 per annum each, with board and residence.

SHETLAND, COUNTY OF.—School Medical Officer, County Medical Officer and Mainland District Medical Officer, and Tuberculosis Officer. Salary £500 per annum.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

STIRLING DISTRICT ASYLUM, Larbert, N.B.—Female Third Assistant Medical Officer. Salary £140 per annum, with board, &c.

STOKE-ON-TRENT, INFECTIOUS DISEASES HOSPITAL, Bucknall.—Female Resident Assistant Medical Officer. Salary £150 per annum, with apartments, board, washing, and attendance.

SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, and laundry.

SWANSEA UNION INSTITUTION.—Resident Assistant Medical Officer, Salary £295 per annum.

TAUNTON, TAUNTON AND SOMERSET HOSPITAL.—Senior House Surgeon and Assistant House Surgeon. Salaries £120 and £80 per annum respectively, with board, lodging, and laundry.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with board, residence, &c.

UNIVERSITY OF LONDON.—University Chair of Physiology at London Hospital Medical College. Salary £600 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £40, with board, laundry, and lodging.

WALSALL AND DISTRICT HOSPITAL.—Senior House Surgeon and Junior House Surgeon and Anæsthetist. Salary £150 and £110 per annum respectively, with board, residence, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Senior House Physician. Salary £120 per annum, with board, residence, and washing.

WHITECHAPEL UNION INFIRMARY, Vallance-road, E.—First Assistant Resident Medical Officer. Salary £160 per annum, with rations, apartments and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer for six months. Salary at rate of £125 per annum, with board, rooms, and laundry.

WOMEN'S HOSPITAL FOR CHILDREN, 688, Harrow-road, W.—Female Assistant Surgeon.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

New Addresses.

BAKER, A. E., M.R.C.S., L.R.C.P., L.D.S., 50, Brook-street, Grosvenor-square, W.

A fee of 2s. 6d. is charged for the insertion of Notices of Change of Address, which must not exceed two lines.

Births, Marriages, and Deaths.

BIRTHS.

SPARROW.—On Nov. 4th, at Essex-road, Watford, the wife of E. C. Sparrow, M.A., M.B., B.C., of a daughter.

SPEIRS.—On Nov. 5th, at The Cedars, Diss, Norfolk, to Dr. and Mrs. Speirs, a daughter.

MARRIAGES.

ACLAND—CORNER.—On Nov. 4th, at Long Sutton, Somerset, John H. D. Acland, Lieutenant R.A.M.C., to Elizabeth Margaret, daughter of Mr. Charles Corner, late Chief Engineer of Rhodesia Railways.

SMITH—HOLTON.—On Nov. 4th, at the Parish Church, Hednesford, by the Rev. R. F. Edwards, Vicar of Weston, Stafford, assisted by the Rev. W. Quibell, Vicar of Hednesford, and the Rev. W. Bagnall, Peter de Safforie, younger son of Charles Smith, of Milligan Hall, Taunton, to Eleanor Dorothy, elder daughter of Dr. Richard Holton, of Littleworth House, Hednesford, Staffs.

DEATHS.

DAVSON.—On Nov. 6th, at St. George's Hospital, Frederick Adams Davson, M.D., J.P., in his 75th year.

KER.—On Nov. 3rd, at "Tintern," Balham-hill, Hugh Richard Ker, F.R.C.S. Edin., aged 68 years.

LAVIS.—On Sept. 10th, near Bourges, France, killed in a motor accident, Henry Johnstone Lavis, M.D., M.R.C.S., B.-ès-Sc., F.G.S., &c., aged 58 years

LOCKWOOD.—On Nov. 8th, at Upper Berkeley-street, Portman-square, W., Charles Barrett Lockwood, F.R.C.S., aged 58 years.

O'CONNOR.—On Oct. 25th, in France, Captain Richard Dominic O'Connor, R.A.M.C.

WENHAM.—On Nov. 4th, at Peking, of pneumonia, Herbert Victor Wenham, F.R.C.S., second son of Arthur and Frances Wenham, of 11, Beauchamp-avenue, Leamington, aged 37 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

A TOUGH DOG.

To the Editor of THE LANCET.

SIR,—Some time ago I was asked to supply a poison. This poison was to be administered to a large dog for having bitten a child; 20 grains of morphinæ mur. in rice were given to the animal. In about an hour the dog went into sleep, thence into a state of coma. This was about 9.30 P.M. The following morning the animal was still under the influence of the poison but not dead. So at 10.30 A.M. 6 drachms of Scheele's prussic acid was put down the dog's throat with the aid of a syringe. The effect was rapid breathing and a slight convulsive movement. The same afternoon the animal had a prowl round the garden. To-day the dog is running about the street "quite well." Now, can you tell me why the dog did not die? It might be possible for a big dog to "pull through" after such a dose of morphia. But how is it the prussic acid did not have the desired effect? I wonder if it would be possible for the morphia to prevent absorption of the acid, and by the time the dog was free of the influence of the morphia for the acid to have lost its strength, or would it be that the acid acted as an antidote to the morphia? I might mention I have poisoned dozens of dogs with prussic acid, but never before have I administered morphia previous to the acid. The acid was taken from a bottle that had not previously been opened. I should like to be enlightened on this subject.

I am, Sir, yours faithfully,

CHAS. OLLEY.

Port Elizabeth, South Africa, Oct. 6th, 1914.

INDIAN MILITARY TITLES.

A CORRESPONDENT writes: "With the advent of the Indian troops in Europe and the examination of the casualty lists, or lists of honour, we are brought face to face with the Indian military titles which are not quite so familiar in England as in India. For instance, in the infantry there is subadar or subahdar, equivalent to captain (really 'governor'); above him, however, is the subadar-major; jemidar, jemadar, or jamadar, equivalent to a lieutenant; havildar or hawaldar, equivalent to a sergeant; but there is also 'havildar-major,' a sergeant-major; naik, a corporal; and sepoy (which is akin to the well-known 'spahi' in the old Turkish army), equivalent to a private, sipahi meaning 'soldier.' In the cavalry a sowar or sáwár ('rider') is a trooper; the duffadar or dafadar, is equivalent to the sergeant; and the risaldar is the captain or commander of a troop of cavalry, a 'risala' being a troop of horses and 'dar' being the 'master, keeper or lord.' Above him is the risaldar-major, but immediately below him is the ressaidar and the jemadar."

FULL FLEDGED.

A CORRESPONDENT draws our attention to a paragraph in the *Aberdeen Press* of Nov. 3rd which, with the omission of name and town, runs as follows:—

> After a full course in practical and theoretical dentistry at the Royal College of Physicians and Surgeons, Edinburgh, Mr. —— ——, The Manse, ——, has attained the degree of L.D.S. Edinburgh.

No one wants to be over-critical in these days, but whoever sent this puff to the newspaper let enthusiasm get the better of discretion.

A FLEMISH PHRASE BOOK FOR NURSES.

A PAMPHLET of useful Flemish phrases for Red Cross work, for nurses, dressers, and other ambulance workers, similar to that on French noticed in THE LANCET of Sept. 12th, p. 728, has now been prepared, and can be had free on application (enclosing a stamp for postage) to Hugo's Language Institute, 64 and 66, Oxford-street, 35, Great George-street, 33, Gracechurch-street, and 205, Earl's Court-road.

H. D. F.—The conditions laid down for the appointment of surgeons for temporary service in the Royal Navy state that applicants must "engage for 6 months certain, but the liability to serve will be limited to 5 years." They will receive two calendar months' notice of services being no longer required, and voluntary resignation of appointment will be allowed subject to the convenience of the service, but the gratuity of two calendar months' pay on discharge will be forfeited in the latter case. It seems quite clear, therefore, that at the end of six months' service the temporary surgeon can, if he wishes, resign, but exactly when his resignation would become operative must depend on where he is stationed at the moment.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Mr. A. Mallock: Note on the Circulation of the Atmosphere.—Colonel Sir Sidney Burrard: On the Origin of the Indo-Gangetic Trough—commonly called the Himalayan Foredeep.—Mr. G. W. Walker: Approximately Permanent Electronic Orbits and the Origin of Spectral Series.—Mr. W. Jevons: Spectroscopic Investigations in connexion with the Active Modification of Nitrogen. IV., A Band Spectrum of Boron Nitride (communicated by Prof. A. Fowler).—Prof. E. Wilson: An Additional Note on the Production of High Permeability in Iron (communicated by Prof. J. A. Fleming).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY.

GENERAL MEETING OF FELLOWS at 5 P.M.

Ballot for the Election of Candidates to the Fellowship.

SECTION OF PATHOLOGY (Hon. Secretaries—Gordon W. Goodhart, C. Price-Jones): at 8.30 P.M.

WEDNESDAY.

SECTION OF THE HISTORY OF MEDICINE (Hon. Secretaries—Raymond Crawfurd, Leonard G. Guthrie): at 5 P.M.

Papers:

Dr. Raymond Crawfurd: Oliver Goldsmith and Medicine.

Mr. Macleod Yearsley: Autograph of Joseph Ignace Guillotin, with Note on Error that he fell a Victim to his own Instrument.

THURSDAY.

SECTION OF DERMATOLOGY (Hon. Secretaries—S. E. Dore, A. M. H. Gray): at 5 P.M.

Exhibition of Cases.

FRIDAY.

SECTION OF OTOLOGY (Hon. Secretaries—W. M. Mollison, E. D. D. Davis): at 5 P.M.

Cases and Specimens:

Will be shown by Dr. Wyatt Wingrave, Mr. C. E. West, Mr. E. D. Davis, Mr. W. M. Mollison, and others.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Discussion on Surgical Experiences of the Present War (opened by Sir Watson Cheyne, Bart.). Mr. A. Edmunds, Sir F. Eve, Mr. R. P. Rowlands, Mr. D'Arcy Power, Mr. C. Symonds, Dr. Embleton, Dr. I. Bruce, and others will take part.

LONDON DERMATOLOGICAL SOCIETY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY.—4.30 P.M., Exhibition of Pathological Specimens and Cases. 5.15 P.M., Resumed Discussion on Dr. C. Mills's paper on Syphilis.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8.30 P.M., Paper:—Sir William Osler, Bart.: Enteric in War, with Means for its Prevention.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. J. B. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Nose, Throat, and Ear (Mr. H. D. Gillies). X Rays and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). Special Demonstration of Selected Ear, Nose, and Throat Cases (Mr. H. D. Gillies).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 5.30 P.M., Eye Operations (Mr. Brooks).

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 11th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 5	29·62	S.E.	0·01	91	61	49	54	54	Fine
" 6	29·80	S.	0·07	94	61	53	53	54	Cloudy
" 7	30 06	S.W.	...	76	54	44	44	44	Foggy
" 8	30·20	W.	...	74	55	41	43	47	Cloudy
" 9	30·22	S.W.	...	80	58	41	50	53	Overcast
" 10	30·14	S.W.	...	76	58	52	51	54	Fine
" 11	29·98	W.	...	58	55	51	49	51	Overcast

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An Address

ON

THE TREATMENT OF WOUNDS IN WAR.

Delivered before the Medical Society of London on Nov. 16th, 1914,

BY SIR W. WATSON CHEYNE, BART., C.B., F.R.S., LL.D. EDIN.,
PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MR. PRESIDENT AND GENTLEMEN,—I propose to-night to limit my share in the discussion on "Surgical Experiences in the present War" to the treatment of wounds sustained from missiles. The treatment of these injuries naturally falls under two headings: (1) The treatment of the wound itself, and (2) the treatment of the various injuries which may be done to the structures or organs through which the missile passes.

It seems to me that at this stage of the war the most urgent and profitable heading to discuss is the first—viz., the treatment of the wound as a wound, apart from the other injuries which may be present. As regards the latter, we can as yet only speak of individual cases, which, however interesting to the surgeon himself, are not sufficiently numerous or advanced to enable us to make any fresh generalisations apart from those which have already been made in connexion with other wars.

THE CHARACTER OF WOUNDS IN WAR.

Naval wounds are practically entirely caused by fragments of shell or portions of the ship itself, broken up by the shells, and these produce large, ragged, lacerated wounds which cannot scab over, and where bones are injured they are very much broken up. We have not had from our ships a single instance of a bullet wound, but we had some bullet and also some shrapnel wounds among the marines from Antwerp. A considerable number of the wounds have also been complicated with burns, while in many cases there have been burns without any wound, as the result of the explosion of the enemy's shells or of our own.

In the case of the army a large proportion of the wounds are due to the sharp-pointed, narrow bullets, many of which pass through the tissues and leave only small apertures of entrance and exit which scab over and seldom require any treatment for the wound itself. Occasionally, however, for various reasons, the wound of exit may be large, in which case sepsis may occur there. The round shrapnel bullets make larger orifices of entrance and exit than the rifle bullets and do not so often scab over, while if they fracture bones the injuries are much more severe. The wounds with portions of shell resemble those met with in naval warfare.

Now, the first thing which strikes everyone who is actively engaged at the present time in the treatment of the wounded, whether on land or sea, is the great prevalence of sepsis. Giving my own experience of naval cases, *all the wounds which I have yet come across have been septic*, some of them very badly so. I hear also that those who are working at the army base hospitals are having a large amount of sepsis in shell and shrapnel wounds, and in addition, at first at any rate, while our army was located towards the centre of the line, were having a good many cases of tetanus and acute spreading gangrene. So far we have not had tetanus in the naval wounded, and that is of course natural, for seeing that the tetanus bacillus reaches wounds from the soil it is only those wounded on land who would get their wounds contaminated with this organism. And, probably for the same reason, I have not met with a case of acute spreading gangrene.

It is a very serious matter that all the larger wounds which arrive at the base are septic. It is true that in some the sepsis is not so severe as to threaten the life of the patient, but it is no light thing for a wound to become septic. Once get sepsis into a wound, especially a compound fracture or a wound of a joint, and you have no certainty as to what the result may be. The patient may lose his life from one or other of the septic diseases, or his limb may have to be removed in order to save his life. His convalescence will be prolonged and may be interrupted by the occurrence of fresh abscesses, while he will suffer much pain. He may be left with serious deformities from the difficulty of replacing parts or of keeping them in proper position on account of the septic wound; and as the result of the extension of the inflammation and suppuration to the various parts in the neighbourhood, structures become matted together, and great disability may ensue.

REASONS FOR SEPTIC CONDITIONS OF WOUNDS.

It is now exactly 50 years ago since Lister formed the opinion that the cause of septic wound troubles was the entrance of bacteria into the wounds, and since he first put that idea to the test in a case of compound fracture. And in that case he saw for the first time in his experience a compound fracture following the course of a simple fracture and not undergoing suppuration. His earliest communication on the subject of the treatment of wounds dealt with compound fractures, most of them severe cases and much soiled, and he was able to record a number of aseptic results and to observe various phenomena, such as the organisation of blood clot, which only occur in an aseptic wound. During the rest of his active life he had to treat many compound fractures and other serious injuries, and with some exceptions, to which I shall presently refer, he obtained aseptic results.

You may well ask then, Why are we not having the same experience here to-day? Why are all the large wounds which reach us from the front in a septic condition? For this there are several reasons.

One very important point which affects this question of asepticity in these wounds is the length of time which may elapse after the injury before the patient comes under treatment. The conditions in the army and the navy are very different from those in civilian practice. In the latter the patient can generally be attended to within a very short time after the infliction of the injury, and can be transported quickly to his own home or to a public or private hospital, where the immediate and subsequent treatment can be at once carried out under the most favourable circumstances and without any further movement of the patient.

The Wounded in Army and Navy.

In the case of the army the wounded must lie where they fall, and cannot be attended to perhaps for many hours. Formerly, where there was not such a terrific hail of missiles over the field of battle, and where, perhaps, a greater feeling of humanity existed, and where also the distances

No. 4760.

between the combatants were not so great, the Army Medical Corps went out with ambulance wagons and were engaged during the progress of the battle in ministering to the wounded and in picking them up and removing them to a region of comparative safety at a short distance away. The ambulance wagons and depôts for first aid were respected as far as possible by the combatants, and though the members of the Army Medical Corps exposed themselves to great dangers, still it was possible in many cases to commence the treatment of the wounded comparatively soon after the infliction of the wound; and, further, battles were over usually in a few hours. At the present time the condition of matters is quite different. In many instances it would be madness to attempt to pick up the wounded while the engagement is going on, not only on account of the tornado of missiles, but also because the combatants are often too far apart for the Red Cross badge on the arms of the men, or even on the wagon, to be recognisable, even if it were respected. Besides, the presence of the wagons and men wandering about the field might give important information as to the position of the combatants. The result is that the wounded often cannot be attended to for a long time; sometimes, indeed, we hear of 48 hours or longer having elapsed before they are collected, and in the meantime the wounds are becoming more and more infected. It is true that where a medical officer is present in the trenches he may be able to do a little, but only very little, in the way of treatment.

Again, when the wounded have been collected, they must nowadays be removed for a considerable distance, sometimes a good many miles, to the field or temporary hospital, and naturally, with enormous numbers of wounded, this transport cannot be carried out in a particularly expeditious or comfortable manner. Even at this field hospital the patient is not at rest; he can only remain there while those parts of the treatment that are most essential are carried out, and then he is sent on to the base. At the field hospital, however, the treatment of the wound itself can be carried out, at any rate in the more serious cases, but in a good many it is not till the patient reaches the base that full attention can be paid to the injuries caused by the missiles.

In the case of the navy the conditions are also very unfavourable. In the old days the wounded were carried down from the deck to the surgeon's quarters as soon as they fell, or very soon afterwards; nowadays the surgeons and non-combatants on a battleship are all kept below, and only those actively engaged in the fight are on deck, and consequently the wounded must lie where they fall till the battle is over, or at any rate till a lull in the fighting occurs. From the battleship the wounded are transhipped as soon as possible to the carrier or hospital ship, from which again they are transferred to the hospital at the base, but the treatment of the wounds can be commenced as soon as they get on board the carrier or hospital ship. So far the wounded have been sent back to the base in a destroyer or other quick war vessel, but this is very unfortunate for them, as a doctor is not, as a rule, carried on board a destroyer, and little or nothing can be done for them during the transit—at any rate, in the way of remedying sepsis. It seems to me that, wherever possible, a hospital ship should be in the neighbourhood of the action, and the badly wounded should be taken on board it as soon as possible, or, if this is not advisable, doctors, orderlies, and dressing materials should be transferred to the destroyer so that the treatment of the wounds may be commenced at once. The position of the hospital ship and the transference of the wounded are, of course, matters dependent on the military necessities of the case, but the commander should always have present in his mind the supreme importance of the immediate treatment of the wounds and the inadvisability of allowing several hours to elapse before they can be attended to. The point is not the speed with which the wounded can be got ashore; it is the earliest time that treatment can be commenced, and this, of course, can be begun at once on board ship if the necessary means are at hand, however slowly the vessel proceeds to the base. The naval wounded have therefore an advantage over the army, in that the wound is not so much soiled and can, as a rule, be attended to sooner; they have the disadvantage that the wounds as a whole are more severe.

Now, as I shall presently point out, the chances of rendering a wound aseptic are comparatively small after 24 hours, and practically *nil* after 48 hours; indeed, after that time I should not make any attempt to disinfect the wound. If, therefore, the case does not come under treatment within 24 hours I do not think that we can blame any surgeon or any system of treatment for the septicity of the wound. In spite, however, of the above disadvantages, a considerable number of cases do come under suitable conditions for treatment within the period of time that I have laid down, and that being the case, a certain proportion of these patients should reach the base with aseptic wounds.

Disinfection of Wounds.

This leads us to the question of the disinfection of the wound, a branch of wound treatment which I fear is but little taught in the schools. Lister's experience and practice in this matter are forgotten, if, indeed, they are now known. The omission really arises from the want of precision and the carelessness which are creeping into the treatment of wounds at the present time. I do not make this as a universal charge by any means. There are many surgeons who take the very greatest care, whose operations it is a pleasure to watch, and whose results are excellent. But there are many others who do not seem to have got a proper grip of the matter, and whose results leave much to be desired. They follow the fashion in having a well-finished operating theatre, in dressing themselves up in the most approved and elaborate fashion, and in having instruments and dressings sterilised; but they end there. They forget the ubiquity of bacteria, and that their instruments, gloves, &c., may lose their sterility during the course of the operation; they deride antiseptics. If suppuration occurs in the wound afterwards they ascribe it to all sorts of causes, such as the silk, catgut, migration of bacteria, gout, influenza, &c., rather than the real cause—viz., their own faulty manipulations; and their example is naturally followed by those whom they teach.

"Asepsis" and "Sterilisation."

In one of my books I placed at the beginning as a motto the following sentence: "Suppuration in a wound made by a surgeon through unbroken skin is due to some error on the part of the surgeon." This gave great offence, but it is absolutely true, and unless a man takes that view and searches his own procedures when things go wrong in order to see where the error was, I quite despair of his ever being a trustworthy aseptic surgeon. To exemplify the carelessness which is not uncommon in the treatment of wounds, I could entertain you for the rest of this meeting by telling you the quaint things which are done by those engaged in operations, and the constant opportunities which are afforded for the entrance of bacteria during an operation, and the crude ideas which are abroad as to "asepsis" and "sterilisation." Watch the course of one of these so-called aseptic operations from a bacteriological point of view and you will see all sorts of errors and omissions which pass unnoticed, and these have led to a large literature on stitch abscesses, bad catgut, migration of bacteria, and so on.

I saw an operation the other day; everything had been sterilised, a dry sterilised towel was spread out on a table, the boiled instruments were turned out on this towel, and were then arranged by a nurse who did not wear a mask. Something excited her attention, two other nurses came up, also unmasked, and the three became agitated, all bending over the instruments and talking at the same time; people were coming and going, and at least 20 minutes elapsed between the time that the instruments were turned out and the commencement of the operation. Were they still aseptic? And yet the surgeon comes in completely booted and spurred, innocently picks up a knife and goes on with the operation. Is it any wonder that that surgeon has a good deal to say about catgut, silk, and so-called stitch abscesses?

I am always very suspicious of so-called sterilised towels and swabs, especially in work in private. They are often placed in a sort of potato steamer for a few minutes, an apparatus which would take hours to cook a potato, and therefore if I do not know the nurses I always order the towels to be boiled in a pan for half an hour and not touched before I arrive. Well, in one case nurses were sent out from a large aseptic hospital who were said to be fully trained and most excellent. They received my instructions about the towels, and on my arrival I found a very small poky room with very few dishes in it (not the palatial apartments in which some of my more fortunate *confrères* are accustomed to operate). I looked about for my towels, but could see no trace of them. I therefore called the nurse and asked her for them. She lifted the lid of the commode and there were my aseptic towels reposing at the bottom of the night-stool—another source of coli infection of wounds which is worth remembering.

A fresh instrument is wanted during an operation, or an instrument falls on the floor. It is popped into some boiling water and presented to the surgeon "sterilised" within a minute! and so on. A surgeon is doing an intestinal anastomosis, clips away mucous membrane, rinses his scissors in some salt solution leaving the tags of mucous membrane and portions of fæces in the basin, and when his hands become sticky rinses them in the basin repeatedly during the course of the operation. When an abscess containing bacillus coli forms he is much interested and refers to the remarkable habit that coli bacilli have of wandering through the coats of the intestine in cases of intestinal anastomosis, separation of adhesions, &c. This pernicious habit of the bacillus coli seems to be particularly common in operations in the pelvis. It never seems to occur to the surgeon that he has introduced the sepsis during his operation and that migration of bacteria, if it occurs at all, only takes place through the inflamed wall of the intestine.

I think the man who annoys me most is the boiled water man! Some surgeons seem to take a particular pride in emphasising their contempt for antiseptics and the extreme simplicity of their methods. A surgeon comes to an operation and finds a dish containing some fluid. He asks what that is, and the nurse who has been carefully trained in real aseptic work says, in fear and trembling: "That is carbolic lotion for your instruments." It is most instructive to see the look of contempt on the surgeon's face as he says: "Carbolic lotion! Who on earth uses antiseptics nowadays? I thought that no one out of an asylum ever thought of them. Take it away and give me a bowl of boiled water." He does not disinfect his hands but trusts to the protection of boiled gloves, which, however, are soiled at the very beginning by being put on with unsterilised hands. He thinks that he is no end of a great man, and the unfortunate thing is that the nurses and students think so too and follow his fatal example. I wonder whether, if such a man had a son at the front at the present time, he would feel happy in the thought that the only thing which the surgeon had at hand for the treatment of wounds in war was a basin of boiled water! Faugh! The futility and littleness of it all make me sick.

Importance of the Bacteriological Problem.

The result of this slackness is that a good many men are being sent out from the schools every year who are not impressed with the bacteriological problem involved in the treatment of wounds, or who have come to believe that no such problem is involved, while they have become thoroughly impregnated with the idea that the use of antiseptics is an abomination, and that no surgeon who has any self-respect left or who is not in his dotage would ever think of using them. When they are confronted with soiled wounds, such as occur on the field of battle, they do not know what to do or how to proceed beyond painting the skin with iodine and covering the wound with a piece of gauze. The consequence is that the bacteria get a firm hold on the tissues before any means which might have been efficient in the first instance can be adopted. Hence the results which Lister obtained with compound fractures at the very beginning of his work 50 years ago, and which he continued to obtain subsequently, are not being met with in the present war.

The answer then to the question, why do practically all wounds in the present war become septic? is threefold: (1) because there is often long and unavoidable delay in collecting the wounded and commencing treatment; (2) because the wounds may be very large and complicated and almost impossible to disinfect thoroughly; and (3) because in a good many cases no attempt is made to disinfect these wounds, or if it is made it is utterly inefficient.

How, then, should the large open wounds which occur in warfare be treated? The treatment of these wounds may be considered under two headings according to the time at which they come under the notice of the surgeon—viz. (1) those which can be treated during the first 24 hours after their infliction: and (2) those which are only met with at a later period, when sepsis and suppuration are already established.

I. Treatment of Wounds which come under the Surgeon's Care within the first 24 Hours after their Infliction.

Let us consider the condition of such a wound from a bacteriological point of view, and here I shall only speak of the larger wounds sometimes caused by bullets and wounds caused by fragments of shell or by shrapnel bullets. Wounds due to the modern small bullets, when they pass directly from one side of the body to the other without injuring bone or becoming deflected, are very small and sometimes difficult to find, and usually scab over and close without any further attention than a piece of dry dressing, unless some important internal structure has been injured.

Rapid Growth of Bacteria in Wounds.

With regard to the larger wounds they must, of course, be widely infected with bacteria at the time of their infliction, at any rate to a considerable depth; and not only is the wound infected at the moment of injury by the bacteria carried in from the skin and clothing by the fragment of shell, but it very rapidly becomes much more seriously infected by dirt from the clothing or from surrounding objects, and in the case of land warfare, by the soil of the place in which the wound is inflicted. These large wounds are consequently infected with all kinds of bacteria, not only with naked, easily killed organisms, but also with highly resistant spores, the latter being most common and most dangerous in wounds soiled with earth. These organisms are not only lying free in the cavity of the wound and thus apt to be washed away by the blood, but they are also adherent to the tissues which form the sides of the wound, if indeed they have not been actually driven into them. These bacteria, finding themselves in a highly nutritious soil and at a suitable temperature and with plenty of moisture, at once begin to sprout and multiply with great rapidity. I do not know how long it would take a spore to sprout in the first instance, but I do not suppose it would be any great length of time; but once they have sprouted, they multiply rapidly. Many organisms divide and double their numbers within 20 minutes. At that rate, it does not take long for a wound to be filled with myriads of organisms. Suppose we take it that each organism divides in half an hour, that would mean that each organism gives origin to 15 million at the end of 12 hours. Further, not only do these organisms multiply in the fluids which are free in the wound, but being in contact with weakened or dead tissues, the pathogenic varieties soon penetrate into the tissues and establish themselves there. Within the first 24 hours, therefore, we may take it that the state of matters is that the fluids in the wound are already teeming with actively growing bacteria, and that they have also penetrated into any pieces of dead tissue on the surface of the wound and to a slight extent into the living tissues forming the wall of the wound. Once they have penetrated into the tissues they establish themselves there and are extremely difficult to dislodge.

Eradication of Sepsis.

Now it is evident that the only efficient way of dealing with such a state of matters is to destroy these organisms which have entered the wound as soon as possible and before they have had time to grow and establish themselves firmly in the tissues, bearing in mind the fact that every hour that passes they quadruple their numbers at the very least. This will not be done by painting a little iodine over the skin around, or even by pushing it in among the blood, and by covering the wound with a piece of aseptic gauze; very much more careful and vigorous treatment is required than that. And it should be in the mind of every man who deals with these wounds that the ultimate results depend to a large extent on the prevention of sepsis; these results concerning not only the life of the patient, but also the rapidity and smoothness of his convalescence and his later condition.

As to the period of time during which it is advisable to attempt disinfection of the wound, my opinion is that it is only during the first 24 hours that it is at all likely that bacteria can be eradicated, and indeed after 12 hours the result is not at all certain. During the first 12 hours, however, the great majority of wounds, unless they are large and irregular or complicated with extensive comminution of bone, can be quite readily and immediately rendered aseptic, and if proper precautions are taken afterwards will remain aseptic, and thus the whole troubles resulting from the primary soiling of the wound will be avoided. Even up to 24 hours the infection can be rooted out in a considerable percentage of the cases. In the circumstances under consideration where wounds are soiled with earth, and where therefore there is considerable danger of tetanus and gangrene, I think that the period during which an attempt at disinfection should be made might be prolonged up to 48 hours. After that time the disinfection will certainly fail, and the attempt will do more harm than good by injuring the tissues which are opposing the invasion of the bacteria and thus enabling the infection to spread more easily and rapidly. Hence I would lay it down as an axiom of practice in the class of wounds under consideration that if the treatment can be carried out within the first 24 hours (and in the case of wounds soiled with earth 48 hours) an attempt should be made to kill the organisms which have entered the wound. These organisms can only be got rid of by means of chemical antiseptics. I fear that, try how you may, you cannot avoid their use.

Two points must be taken into consideration in making this attempt. The first point is, that we have not only to kill actively growing bacteria, but also the spores of bacilli, seeing that some of the latter class of organisms are highly pathogenic. For example, the tetanus bacilli and various other bacteria which cause pathogenic processes, such as some forms of gangrene, are spore bearing, and are thus extremely resistant to all destructive agents. Hence, the agents we use must be sufficiently potent to kill spores under whatever circumstance they are found, whether dry or in albuminous or oily materials. And the second point is that these spores must be killed quickly because one cannot keep such potent agents for any length of time in contact with the tissues, otherwise they may destroy them, and furthermore, these agents, if absorbed into the system, are all more or less poisonous.

Antiseptic Agents.

There are three potent antiseptics in common use at the present time—viz., carbolic acid, bichloride or biniodide of mercury, and iodine. Of these, we may exclude the mercurial salts, because although they kill microbes quite readily and in very considerable dilutions, if these organisms are free or in a slightly albuminous fluid they are of no use when the organisms are present in albuminous or oily substances. In the case of the former, mercury combines immediately with the albumin, forming a compound which possesses very little antiseptic power; and as regards the latter, these salts do not dissolve in oil, and therefore organisms lying in oily material are not reached by the antiseptic. We are therefore left with the two substances, carbolic acid and iodine, and we must now consider these substances and determine which of them is best and most suitable and in what strength they should be used.

(*a*) *Carbolic acid.*—A saturated watery solution of carbolic acid (1 in 20) will kill naked, actively growing bacteria in a few seconds, but will not kill spores with certainty under from 12 to 15 hours, and this time will be still further prolonged if these spores are present in albuminous or oily material, because a certain amount of the antiseptic power of the carbolic acid is lost in combining with these substances. It is evident, therefore, that washing out the cavity of the wound with 1 in 20 carbolic lotion will not disinfect it if it contains the spores of pathogenic bacilli. On the other hand, liquefied carbolic acid will kill spores in a very few minutes—as soon, in fact, as it can soak into them. And therefore, if carbolic acid is to be employed in wounds soiled with material such as earth containing pathogenic spores, it must be used in the form of liquefied carbolic acid. Carbolic acid precipitates and combines with albumin, but the compound is still strongly antiseptic. It also dissolves readily and in large amount in oil, still retaining its antiseptic property, though not so strong as in watery solution. (1 in 10 oily solution is about equal antiseptically to 1 in 20 watery solution.) Hence the presence of oil does not protect the bacteria. This is the chief reason why I prefer carbolic acid for the disinfection of the skin rather than any other antiseptic, because it dissolves in the natural oil of the skin and so can extend its antiseptic action down the hair follicles and the orifices of the sebaceous glands. Further, carbolic acid is an anæsthetic, and its application causes very slight pain which subsides almost immediately.

(*b*) *Iodine.*—The antiseptic power of iodine is practically the same as that of carbolic acid, so that the 2 per cent. solution in common use is of about the same value as 1 in 50 carbolic lotion. What the effect of a 5 per cent. solution of iodine or of still stronger iodine would be on the tissues I do not know, but I fancy it would be intensely irritating, to say the least. Even with the 2 per cent. solution the skin must be dry before it is applied, otherwise it is very apt to be blistered, and the antiseptic properties of the iodine solution are said to be diminished. How it could be used in the field with the impossibility of drying the skin and keeping it dry I do not know, and I have been told that there have been several cases of iodine burns of the skin where this antiseptic had been employed.

Further, iodine causes great pain which lasts for a considerable time, as is well known in connexion with the iodine treatment of hydrocele. When I was a student the treatment of hydrocele was the injection of a strong solution of iodine, and the agonies which the patient suffered afterwards, and the pain and the inflammation which lasted for some days, was in very marked contrast to the painlessness and absence of inflammation which follow the injection of carbolic acid. Hence, although I may be thought not to be up-to-date, I still prefer carbolic acid to iodine, not only for the disinfection of the skin, but also, and more especially in the circumstances with which we are dealing—viz., as a means of destroying the bacteria which have already entered wounds before they come under the care of the surgeon. I am not, however, prepared to say that a sufficiently strong preparation of iodine might not possibly effect the same purpose, but in a few cases which I have seen in which iodine has been applied to the wound, it had not prevented the sepsis. Personally, if I had a wound I should insist on the use of carbolic acid in preference to iodine, both from the point of view of efficiency and of comfort.

Other antiseptics have been suggested, but none of them are sufficiently potent for the cases under consideration. Of these, peroxide of hydrogen seems to be a favourite abroad, but its antiseptic power is comparatively weak and it would be useless against spores.

Lister's First Work.

Before describing the details of the procedure to be adopted in disinfecting a wound let me recall Lister's first work and our subsequent experience. Lister's first attempt at aseptic work was by the use of a crude solution of carbolic acid called German creasote, so impure that at first he thought that carbolic acid was insoluble in water. For a time his experiments were only made on compound fractures, of which a large number, some of them very serious, occurred in Glasgow, where he was located at that time. His original plan was to introduce a piece of lint soaked in this crude carbolic acid into the wounds and thoroughly rub it into the recesses, and then to put in some more carbolic acid and stir it up with the blood so as to form a sort of paste which filled up the wound. Every day he painted a little carbolic acid over this coagulum, and in order to diminish the evaporation of the acid he covered the clot with a piece of block tin. Ordinary towels were then applied around to catch the discharge which soaked through; no other dressing was employed.

What was the result? All the cases followed an aseptic course so long as he continued the application of the carbolic acid; there was no temperature, no inflammation, no sloughs separating, no poisoning—in fact, none of the dreadful things which students are led to believe will result from the application of carbolic acid. No doubt in some cases where the carbolic acid was in contact for some time with the skin a small superficial slough formed which, however, was of no consequence. After a time, when he peeled off the superficial layer of the clot he found a healed, or almost healed, wound beneath. And as showing the absence of any injurious effects, it was in cases so treated that he first observed and demonstrated how blood clot if aseptic acts as a mould for the penetration of cells and for the formation of new tissue—what is now known as healing by blood clot. In some of his cases he discontinued the application of the carbolic acid after the deeper part of the wound had healed and when there was only a superficial sore, and as he had not devised any antiseptic dressing then he employed the ordinary dressings which he had previously been in the habit of using. Two or three of these cases showed septic troubles after the carbolic acid was left off, and, indeed, phagedæna occurred at this late stage, thus affording additional proof of the protective effect of his new treatment. I would recommend those who hold up their hands in horror at the idea of applying liquid carbolic acid to infected wounds to read and digest Lister's early papers.

Development of System.

As he developed his system, and found that carbolic acid was soluble and active in oil and water, he modified his plans, and later his method was to wash out compound fractures thoroughly with 1 in 20 carbolic acid lotion, taking measures to see that all recesses of the wound were subjected to its action. With this second plan the majority of compound fractures also remained aseptic, but a certain proportion did not do so, these results differing therefore from those which he obtained in the early days with the crude carbolic acid; these failures chiefly occurred in wounds which were badly soiled. We now know the reason of this—viz., that the dirt may be so ground into the tissues that the carbolic solution does not penetrate it thoroughly, and further that the 1 in 20 solution does not kill pathogenic spores in a short time. This led us to remove all visibly soiled portions of soft tissues or bones and to apply liquid carbolic acid to these surfaces, using the 1 in 20 lotion for the rest of the wound, and this diminished the number of failures, and this is the plan I adopt in civilian practice. I believe that this plan would be quite satisfactory in the majority of wounds in war, but where they are very badly soiled with earth, as is so often the case at present, we should, I feel sure, revert to Lister's original plan in so far as to paint the whole surface of the wound with liquid carbolic acid, with the exception, perhaps, of narrow tracks in the deeper parts. Certainly this ought to be done in all cases of compound fracture.

In carrying out the disinfection of the interior of the wound not only must it be done methodically and thoroughly, and all the recesses of the wounds carefully attended to, but one must not forget that it is most important to disinfect the surrounding skin most carefully. It is useless to disinfect the interior of the wound and to leave bacteria on the skin free to multiply there and spread in and infect the wound again. I also think it is best to *begin* with the disinfection of the skin. Again, one great difficulty in obtaining proper disinfection of a wound is the constant flow of blood from the wound which dilutes and washes away the antiseptic, and steps must be taken as far as possible to arrest or control the hæmorrhage in the first instance; this is a very important point. It may also be necessary to open up the wound, not only in order to arrest the bleeding, but also to reach all the recesses of the wound for the purpose of disinfection. Further, the process is painful, and therefore I should advise that in all cases an anæsthetic should be administered.

Method of Disinfection of Wounds.

The procedure would be as follows. The patient having been placed under an anæsthetic, the first thing is to control the bleeding. In the case of an extremity a tourniquet is applied, but where the wound is situated in the trunk any visible bleeding points should be clamped and the wound temporarily stuffed with gauze or large sponges. The next step is to cleanse and disinfect the skin thoroughly. In the first place scrub it thoroughly with 1 in 20 carbolic lotion and ether soap, then shave it, and finally wash it thoroughly again with the carbolic lotion, leaving a cloth saturated with the lotion over the whole area, so as to continue the disinfecting action and protect the skin while the interior of the wound is being attended to. The interior of the wound must now be disinfected, and if it is necessary to gain access to the deeper parts in order to enable one to see what one is doing, which is very important, the wound must be enlarged by incisions made in suitable directions. The blood must be thoroughly swabbed out, the wound made as dry as possible, and the skin or fat or other structures which are visibly soiled with earth or dirt should be cut away. The wound being then held wide open by retractors, a piece of sponge dipped in the liquefied carbolic acid is carefully and thoroughly applied to the whole surface of the wound and to all the recesses, care being taken, by holding a swab in the other hand on the edge of the wound, to prevent the acid running over the skin. It is well to sponge out the wound after the first application, and then to apply the acid a second and even a third time if there is bad soiling. If at the bottom of the wound there is a long narrow track leading to the tissues, it may not be necessary to disinfect it along its whole length, because the probability is that the bullet or fragment of shell does not carry the organisms in to a very great depth. If it is a large wound which has to be soaked with the undiluted carbolic acid, it may be well, after about 5 to 10 minutes, to wash it out first with 1–20 carbolic lotion and then copiously with saline solution, so as to get rid of the excess of carbolic acid and thus reduce the chance of absorption.

Having completed the disinfection of the wound, the tourniquet is relaxed, the vessels tied, and a good-sized drainage-tube inserted down to the bottom of the wound, or even through a counter opening if there is any doubt as to the thoroughness of the disinfection. Any incisions made by the surgeon may be closed by stitches, but no attempt should be made to stitch up the original wound, unless possibly where flaps of skin have been turned to one side, in which case they may be brought roughly into position by two or three stitches. After the disinfection of the wound is complete it is well to give the skin around an additional wash with the carbolic lotion, in case it may have again become soiled from the wound.

In the case of a wound on the trunk or neck where no tourniquet is available, and where therefore the bleeding cannot be thoroughly checked, the disinfection is much more difficult and uncertain, because blood is constantly washing away and diluting the antiseptic. Hence the first thing to be done under these circumstances is to open up the wound and try to check the bleeding by clamping any bleeding points; these, however, must not be tied at this stage. The wound should then be firmly packed with gauze, so as to check the capillary oozing. Having done this, the skin around is cleansed and disinfected in the manner already described, and attention is then turned to the wound itself. The plug is then taken out and a smaller one substituted, so as to leave the skin and subcutaneous tissue exposed to view. The surfaces so exposed are then dealt with in the manner already described, badly soiled skin and fat being clipped away and the surface thoroughly soaked with the antiseptic. Further portions of the plug are then removed so that the whole surface of the wound may be disinfected bit by bit; in addition it is well to irrigate it thoroughly with 1 in 20 carbolic lotion, and then, if large, with salt solution. Finally, the vessels are tied, and in doing so it is well in the first instance to take off the forceps one by one, daub the vessel with carbolic acid, catch it again with clean forceps, and then tie it. The rationale of this procedure is that the piece of tissue caught by the forceps has not been disinfected, and if it were tied at once a septic point and ligature would result.

In both cases after the disinfection is complete an antiseptic dressing (not merely an aseptic one) should be applied. The reason for using a dressing containing an antiseptic is that in the first place aseptic dressings are seldom available on the field of battle, and in the second place it may not be possible to change the dressing for some time, and if a non-antiseptic dressing is used the discharge passes through it and bacteria rapidly develop in it and reach the wound. On the other hand, a dressing containing an antiseptic which is soluble in the serum may give enough of the antiseptic to the serum to render it an unsuitable medium for the development of organisms, and thus, if the dressing cannot be changed early, an aseptic result may still be obtained. I believe that wool impregnated with salicylic acid is the best for this purpose, but it is well to put a piece of cyanide gauze (which is itself only feebly antiseptic) over the wound, so as to keep the salicylic acid from the skin.

It takes a long time to describe this matter, but it is perfectly simple, and I have adopted this method of dealing with compound fractures and other open wounds for years with a very large measure of success, and I should be very much ashamed if any considerable number of cases which came under my care within 12 hours after the accident did not follow an aseptic course. If iodine is preferred I cannot say what strength should be used, but it certainly ought to be much stronger than the ordinary 2 per cent. solution which is the favourite at present. The procedure would be the same as I have already described. If iodine is used instead of carbolic acid for the disinfection of the skin, it should not be applied directly over the dirty skin, and therefore, here also, the skin must be thoroughly washed and shaved and dried, first with a dry cloth and then with acetone. The trouble is that the skin will soon be wet again with the blood and serum when the wound is taken in hand, and not only is the disinfection imperfect, but the skin painted with iodine, if again wetted, is liable to be much irritated. I have not the slightest hesitation in saying that the disinfection will be much more thoroughly and satisfactorily done with carbolic acid, with less loss of time and also with less irritation of the skin.

Local Disinfection and Other Methods of Treatment.

The proper disinfection of a wound cannot be carried out in a hurry, and unfortunately in the army it will not be till the patient has arrived at the first field hospital, and in the navy, till the patient reaches the surgeon's quarters on the battleship or the hospital ship itself, that it can be taken in hand thoroughly. Whether anything can be done in the field or trenches which might help to delay or circumscribe the sepsis is a problem well worth considering. The first dressings with which the soldiers are provided are of no use except to prevent the entrance of further dirt, and the surgeon cannot be expected to carry with him the necessary arrangements for disinfecting the wound, though he might carry some antiseptics which might be introduced into the wound. Thus we have been trying at Chatham to make soluble bougies or suppositories, each containing 1½ grains of carbolic acid, which might be pushed into a wound before the emergency dressing is applied, or the surgeon might be provided with strong iodine solution, and pieces of gauze soaked in this solution might be pushed into the wound and left there. No thorough disinfection can, however, be carried out till the patient has reached some place (field hospital or sick bay) where he can rest for some time and where the methodical disinfection of the wound can be undertaken. As soon, however, as the patient has arrived at such a place the wound should be disinfected thoroughly, whether anything has been done previously or not. Even at the field hospital or sick bay it may not be possible to keep the patients long enough for all the wounds to be thoroughly disinfected, but at any rate all compound fractures and wounds of joints which do not require amputation and all wounds badly soiled with earth should be dealt with as far as possible.

At the present moment great stress is being laid on the particular kinds of organisms which may have entered the wounds, but very little is said about disinfecting the wounds. Instructions are being given, as regards the army, that immediately the patient comes under treatment he should have a subcutaneous injection of antitetanic serum and another of polyvalent antisepsis vaccine. Now I cannot speak with any authority as to the prophylactic value of antitetanic serum when injected into the subcutaneous tissues, but although *subcutaneous* injections of this serum are of no value in the treatment of tetanus once it has developed, those who have worked at the subject state that subcutaneous injection of the serum is of value if used immediately on the occurrence of infection. As regards antisepsis vaccine as a prophylactic, I am very sceptical indeed. It may possibly modify the severity of the impending sepsis, but I feel sure it cannot be depended on to prevent it. At the same time, we must not disregard any possible safeguard, and for the present I think it is well, in military surgery at any rate, to inject these substances in the manner which has been advised. I should not think that it is necessary in naval surgery to inject antitetanic serum.

I do hope, however, that those who have to treat these wounds will not take it into their heads that after making these injections they have done all, or indeed, anything of any real importance for the safety of the patient. I am very much afraid that some men will be satisfied with these injections, and will take no further local steps to render the wound aseptic, and will look on these injections as a way of avoiding the use of the much-hated chemical antiseptics. By all means use these injections, but never lose sight of the fact that the only trustworthy way of avoiding the septic diseases which inevitably follow these wounds is to kill the organisms before they have taken root in the body. Remember also that we have not to do only with one species of organism; we have to do with a great many, and even if the methods suggested were as effective as we could hope it leaves many other organisms untouched.

II.—TREATMENT OF WOUNDS IF MORE THAN 24 OR POSSIBLY 48 HOURS HAVE ELAPSED SINCE THE INFLICTION OF THE WOUND.

It may happen that patients cannot be treated within the period above mentioned, and the question then arises whether any attempt should be made to disinfect the wound in the manner above described. By this time the organisms will, for the most part, have got a firm hold on the tissues, and any attempt to get rid of them by antiseptics will fail, and if the attempt fails at this stage it may cause a great deal of harm by injuring the actively granulating tissues. It may possibly be well still to clip away any visibly soiled tissues and touch the raw surfaces with liquid carbolic acid, but I think that any attempt at general disinfection of the wound would be a very injudicious and harmful procedure, and still more so if suppuration has begun. Indeed, I would go further and say that not only should strong antiseptics be avoided, but also even weaker ones. I usually find that surgeons get busy syringing out these early septic wounds with various antiseptic lotions, and not only on the first occasion but every time the dressing is changed, and I consider this to be very bad practice indeed.

The Relation of Antiseptics to Wounds.

In fact, my views on the relation of antiseptics to wounds are exactly the opposite to those in vogue at the present time. It may be that I am not up to date, but I fancy that I have perhaps been trained to take the treatment of wounds more seriously than most people, and to think and work a great deal at it. My own view is that if a wound is aseptic, while I do not willingly put antiseptics into it, their entrance will not interfere with healing at all so long as no bacteria have been let in by the surgeon. But on the other hand, if bacteria are already established in a wound, I think it is the worst treatment possible to meddle with it more than one can help, and more especially to syringe it out with antiseptics and to poke gauze and other things into it. The general practice at present is just the reverse—viz., to avoid antiseptics when the matter is of no consequence and when their use outside the wound may help to prevent the reinfection of instruments and materials used; and, on the other hand, to use them when the wounds are septic, when they cannot kill the bacteria, and when the only effect they can have is to damage the natural defences of the tissues. The chief antiseptic which I would use in septic wounds, and that only in foul-smelling ones, is peroxide of hydrogen, which, although a feeble antiseptic, certainly seems to overcome the fetor and does not irritate the tissues to any marked degree. If it is deemed advisable to wash out a septic wound, use normal saline solution as a rule, though very weak antiseptic lotions may do no noticeable harm, once granulation is fully established.

I believe that the chief reason for the present prejudice against antiseptics was the free use of these lotions formerly by surgeons who deluged their wounds with antiseptics, but took no care as regards disinfection of hands, skin, instruments, &c., and infected their wounds thereby, at the same time damaging the resisting power of the tissues by their antiseptics. The result was that the wounds did badly, but not, as they thought, as the direct effect of the antiseptic, but from the introduction of bacteria into the weakened wounds. They thought they were practising Listerism, and therefore gave it a bad name, but they were not following the master's teaching. I remember in the old days of the carbolic spray remarking to Lister more than once that while practically all our wounds healed aseptically, yet if a wound did go wrong with us, it went wrong worse than in the hands of septic surgeons. The reason was that the irritation of the spray diminished the local resisting power, and so enabled the organisms introduced to grow more readily; if no organisms were introduced this temporary diminution of local resisting power did not matter. It is curious how difficult it is to make people understand that carbolic acid or other antiseptic is not used as an application to a wound, but as an application to the bacteria outside the wound. The healthy tissues are sterile, as I was the first to demonstrate many years ago, and they need no antiseptic application to them; the enemy, the bacteria, come from without and should be killed outside the wound.

Drainage of Wounds.

As the wounds have come to us at the base hospital they are not only septic but they are often imperfectly drained. It is therefore necessary in most cases of large wounds, and especially where bones or joints are injured, to interfere with them by operative measures on their arrival at the hospital, but this should be done, as far as possible, once and for all. The patient having been put under an anæsthetic, the skin should be cleansed and disinfected in the manner previously described, and if there is any earth or gross dirt still visible about the wound the tissues involved should be cut or clipped away and the raw surface daubed with liquid carbolic acid. Apart from this, which is only occasionally necessary, the important point is to provide the freest possible escape for discharge, and in order to obtain this it is often necessary to enlarge the original openings and to make counter openings. Further, any foreign bodies which are readily accessible, such as clothing or fragments of shell retained in the wound, should be removed, but at this stage it is not advisable to open up fresh wounds in the deeper tissues in order to hunt for bullets or pieces of shell, for this is only to expose fresh tissues to infection unnecessarily before the body generally has developed its full resisting power.

As to the actual drainage of the wounds, that must be carried out by the use of as large drainage tubes as can be conveniently introduced, with holes of suitable size cut in their sides; where there are counter openings it is well to pass the tube through from one opening to the other. A most extraordinary practice has grown up of late—viz., instead of using open tubes, to introduce masses of gauze into the wound under the idea that they will drain away the pus. Even those who use tubes generally slit them open at one side and fill them with gauze. Now the object of drainage and dependent openings in these cases is to let the pus run away as soon as possible so that the products of bacteria shall not lie in the part and cause local irritation or be absorbed. To push gauze into a sinus is effectually to prevent the pus escaping freely; and the pus soaking into the gauze and lying there undergoes still further changes as the result of the bacteric growth, and becomes a highly poisonous and irritating substance. Whoever heard of stuffing a drain-pipe with gauze so as to let water run away, far less thicker material like pus?

I cannot conceive how this method of draining wounds ever arose; I fancy it was some aseptic surgeon who found that when he put a drainage tube into a wound the wound always suppurated, and the bright idea occurred to him that by using gauze instead he would keep bacteria out. However it arose, I regard it as one of the most foolish and mischievous things that have ever been introduced in connexion with the treatment of wounds, and especially of suppurating ones.

I may illustrate this by an anecdote. Some years ago I built a house in the country and we had some difficulty in getting a proper water-supply. At length I found a spring on the top of a hill in the neighbourhood where the earth had been somewhat hollowed out and which was used by a crofter not only for household purposes but also to water the animals. I got leave from the landlord to make a proper well there and to get the overflow for my own use. This I did, making a nice clean well for the crofter with an overflow to water the animals, and this left ample water for my house. The crofters are very conservative people, though they always vote for the Radical candidate, and this particular old lady had a great affection for the old well and resented very much the new one. To relieve her feelings she put all sorts of things—rotten fish, &c.—into the well. We did not notice this at first, and thought the water was extra good and tasty, but presently the flow of water through our pipe began to fail and ultimately stopped altogether. On examining the well the spring was all right, and there was nothing for it but to dig up the pipe. About a hundred yards from the well I found a piece of dirty linen, evidently a portion of the old lady's chemise, which was very rotten and completely prevented the flow of water. Now this is exactly what you do when you fill a drainage-tube with gauze; you prevent the free exit of the pus, and the gauze becomes very rotten and poisonous.

I do not think one can go too far in preventing the accumulation of septic material in a wound. Two of the very best cases which I have so far had have been cases of fracture of the pelvis with extensive tearing of the rectum. For a few days they were treated by drainage, a large tube through the anus, constant irrigation, &c., without any improvement, but as soon as I performed colotomy and cut off the access of fæces their improvement was immediate and most remarkable, and one of them has already healed and will soon be in a condition to have his colotomy opening closed.

Dressings.—Irrigation.

As regards dressings in these cases, of course aseptic dressings are not only useless but injurious. The septic discharge soaks into them and decomposes there, and the dressing simply becomes a septic poultice which poisons the wound. Antiseptic dressings are rather better, and in small wounds do well enough, the dressings I use being cyanide gauze next the wound with salicylic wool outside. But in large wounds the pus does not take up enough antiseptic to stop the decomposition entirely, and I am not at all satisfied with large masses of dressings over a wound. I believe that in these bad septic cases the less dressing you apply the better, and my experience is that as regards dressings it is best in these cases only to lay a few layers of antiseptic gauze over the wound to prevent it being soiled by the clothing or blankets, and to apply boracic fomentations and change them frequently. To pile on dressings on septic wounds, whether these dressings do or do not contain antiseptic substances, is only to revert to the old methods of two or three centuries ago which have been long since, and quite rightly, discarded. Wherever it is possible, however, in the case of large wounds and those involving bones or joints, constant irrigation with normal saline solution is by far the best method of treatment where circumstances allow of the employment of this plan. The irrigation is at first continued day and night, but after some time, as the discharge gets less and the wound begins to heal, boracic fomentations may be substituted during the night, but the irrigation should be continued during the day till healing is nearly complete. Where gangrenous processes set in, a water bath, frequently changed, with a little iodine or permanganate of potash in the water is the best treatment.

Removal of Missiles.

There is just one other point to which I shall refer—viz., the question of the removal of the missile which has done the damage. Of course, if it is present in the main wound, or is doing harm by pressure or otherwise, it should be removed at once; but not uncommonly fragments of shell or bullets pass into the tissues for a considerable distance from the main wound, and if left alone may become encapsuled and not do any harm and the wound of entrance will heal quite well. Such fragments can be removed by a separate incision later if necessary. I think that there is too great a tendency to hunt for small fragments of shell or bullets at the present time. It is interesting that when they traverse the tissues for some distance they seem to shed the septic material which they have carried in with them. I have one case where a piece of shell passed through the rectum and is embedded deeply in the other thigh and is not causing any irritation. It is well, however, to have a stereoscopic skiagram taken in all these cases as soon as the condition of the patient allows; this will help the surgeon to determine later if he should remove the fragment.

CONCLUSION.

Gentlemen, I am afraid I have taken up far too much of your time, but the question I have been referring to is one of tremendous importance, and I entreat you to give it your most earnest consideration. If you have followed what I have said, it is clear that I only advocate the use of antiseptics at the very commencement of the treatment, but at that time, in order to serve the purpose, they must be sufficiently powerful. I am much opposed to their use in suppurating wounds. Some object to the use of these strong antiseptics on the ground that they may cause a slough. This, however, is a mistake; used as I have advised they may kill a microscopic layer of the surface of the wound, but they cause no visible slough. Even if they did cause a slough, if you have destroyed the bacteria the slough is of no consequence; it will be absorbed like any other piece of dead tissue, and what does a slough matter as compared with the life and future usefulness of the patient? It is very trying for those of us who are parents to feel that any day we may hear of the death of our boys in battle. If they die on the field of battle, they at least die nobly in fighting for their country and for the safety of those they have left behind. Surely it makes it still harder for us to know that if they escape death on the field of battle they may still, as the result of imperfect disinfection of the wounds, die from sepsis or be maimed for life. I beg of you to consider this matter calmly and logically and without prejudice, and see that every possible means is taken to avoid this great calamity.

SPLENOMEGALIC (HÆMOLYTIC) JAUNDICE ASSOCIATED WITH BILE PIGMENT IN THE URINE.

REPORT OF A CASE IN WHICH SPLENECTOMY WAS PERFORMED.

By T. R. C. WHIPHAM, M.A., M.D. Oxon., M.R.C.P. Lond.,

PHYSICIAN TO THE EVELINA HOSPITAL FOR CHILDREN; ASSISTANT PHYSICIAN AND PHYSICIAN IN CHARGE OF THE CHILDREN'S DEPARTMENT AT THE PRINCE OF WALES'S GENERAL HOSPITAL, TOTTENHAM.

With Remarks by H. W. Carson, F.R.C.S. Eng., *Senior Surgeon, Prince of Wales's General Hospital.*

The term "acholuric jaundice" is the one which is usually employed to designate that class of case in which more or less persistent jaundice occurs in association with enlargement of the spleen and frequently with that of the liver also. The disease is now regarded as a clinical entity, but its nature requires further elucidation. The condition is most frequently congenital, but in some instances the onset apears not to commence until somewhat later in life. It is also familial in that more than one member of a family and successive generations may be affected. The syndrome comprises in addition to the jaundice and enlargement of the spleen and liver already referred to an anæmia, which is characterised by an increased fragility of the red corpuscles and a low colour index, together with coloured stools and urine containing urobilin but free from bilirubin. These characteristics of the urine have up to the present time been regarded as essential features of the disease, but I venture now to raise the question whether too much stress has not hitherto been laid upon the acholuria.

Such observers as Banti, Parkes Weber, and Poynton have noted the occurrence of bile pigment in the urine during exacerbations in cases of acholuric jaundice, and in Weber's case of persistent slight jaundice,[1] which will be referred to again later, Gmelin's reaction was frequently positive. It is also possible that bilirubin in small quantities may occur in the urine, although its presence cannot be detected. In such instances the characteristic reaction may be masked by other pigments which accompany it.

It thus appears that in some cases bile pigment is not uniformly absent from the urine. The case related below, however, affords a new aspect of the disease as regards the bilirubinuria in that the jaundice was always found to be accompanied by the presence of bile pigment in the urine and an absence of urobilin. The urine was examined on several occasions both before and after splenectomy, and at each examination this was found to be the case. It is, therefore, perhaps better to abandon the term "acholuric" as applied to these cases and to designate the disease as in the title to this paper from its chief symptoms—viz., jaundice, hæmolysis, and splenomegaly. Other names which have been given to the condition are also open to objection. Splenomegalic anæmia does not seem sufficiently distinctive, and further might be confounded with splenic anæmia. Hæmolytic splenomegaly conveys possibly the suggestion that the hæmolysis is due to the direct action of the enlarged spleen upon the blood, of which there is no certain evidence. The action of the spleen is probably by means of its internal secretion, which exerts an influence on the bone marrow tending to the production of red blood corpuscles deficient in their power of resisting hæmolysins; in this way the organ is indirectly the cause of the hæmolysis. The term "cholæmia," on the other hand, has the advantage of being short, but is somewhat indefinite. I would suggest, therefore, that the name "splenomegalic jaundice" (with perhaps the additional adjective "hæmolytic") be used for this disease, at all events until a clearer insight into its nature is obtained. It would at any rate avoid the confusion caused by the multiplicity of terms.

The case which I have to report is that of a girl, aged 6 years, who was born jaundiced. The icterus lasted for six weeks, but from that time until three months previously to being seen at the Prince of Wales's Hospital (May 26th, 1913) she was said to have been free and to have had good health. In February, 1913, there was a sudden recrudescence of the jaundice, and the child began to look anæmic and to lose flesh. Epistaxis occurred from time to time, but there were no other hæmorrhages. The stools were normally pigmented and the urine was of a deep colour. The patient was a well-grown girl who appeared somewhat anæmic and listless, but the most striking feature about her was a deep olive-green jaundice, the most intense that I have seen in a child. The spleen was enlarged, its lower pole being felt about halfway between the costal margin and the umbilicus, and the liver also was considerably increased in size. The stools were coloured, bile pigment was present in the urine, and a blood count showed a lymphocytosis. There was no history of a similar condition in the family or of syphilis, there being only an elder brother, who had always been healthy. The mother had had no miscarriages, and a month later gave birth to a healthy child with no signs of jaundice. The Wassermann reaction, moreover, was negative. Frequent attacks of epistaxis supervened, and at the end of a few weeks the jaundice was slightly less marked. The spleen, however, became more enlarged and extended nearly to the umbilical level; the liver edge also could be felt a little lower than at first. At the end of three months (September) the icterus was distinctly less and a slight rose colour could be seen in the cheeks. At the same time the urine was less pigmented with bile. The spleen was slightly larger, but the liver, which in July had reached below the level of the umbilicus in the right nipple line, had somewhat decreased in size. The motions, as at first, were always pigmented. The temperature when taken was slightly raised, varying between 99° and 99·8° F. Examinations of the blood showed a diminution in the number of red corpuscles, and in October they did not amount to half the original count. Some enlargement of the cervical and axillary lymphatic glands was now noticed, but the patient seemed to be holding her own in spite of the deterioration of the blood, and had gained $4\frac{1}{4}$ lb. in weight in less than four months. The jaundice by this time had still further diminished, but the urine continued to show the presence of bilirubin and was free from urobilin. The spleen continued to increase slowly in size, and by December it extended below the level of the umbilicus; the edge of the liver was then also lower again. The blood showed a further deterioration, and the fragility of the red corpuscles as tested with sodium chloride solutions was increased, hæmolysis occurring in a 0·55 per cent. solution of NaCl, but not in a 0·6 per cent. The patient continued to gain in weight, but a certain degree of jaundice persisted, and the general condition became more and more unsatisfactory in spite of treatment with arsenic, iron, and other tonics. By March, 1914, she had gained a further $4\frac{1}{2}$ lb. in weight, but the blood count had fallen to below 1,000,000 red cells per c.mm., and the fragility was still more marked than normal. The spleen at this time was slightly bigger, but the liver edge had again receded somewhat. I therefore asked my colleague, Mr. H. W. Carson, to see the patient, and he agreed to remove the spleen.

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[1] Transactions of the Clinical Society of London, 1903, vol. xxxvi., p. 247. This case is a doubtful example of those under discussion, as no obvious alteration in the size of the liver or spleen could be made out. Dr. Weber informs me that the patient died nine months later in another hospital, but no necropsy was obtained.

On April 7th splenectomy was performed. The patient stood the operation well and at once began to improve. Her spirits rose, the jaundice disappeared, and a healthy colour soon returned to the cheeks. The temperature, which had been from 99° to 100° F., fell to normal by the end of a week, and in a fortnight a blood count showed an increase of over 3,000,000 red cells per c.mm., although the colour index was only slightly increased. The patient was sent to the convalescent home and returned in May to all appearance a healthy child, having regained the weight which she had lost as the result of the operation. A blood count, however, showed a diminution in the number of erythrocytes, but the colour index was higher. The liver remained the same size as in March. Subsequently the patient had some epistaxis, but continued in excellent health, and on July 13th the red cells had risen to 6,000,000 per c.mm. and showed a normal fragility. On July 24th, however, the patient was sick and out of sorts generally. Epistaxis occurred and the jaundice returned, the urine again becoming dark coloured. On the 27th she was peevish and not nearly so well. She had lost her colour and presented a degree of jaundice similar to that shown before her operation. She had also lost 4¾ lb. since her previous weighing on June 3rd. The tongue was coated and the temperature 99·4° The blood showed only a slight decrease in the number of erythrocytes, but a distinct fall in the colour index; the fragility of the red cells was normal. The urine was again found to contain bile pigment, but no urobilin. Three days later the patient died at home. No necropsy was performed.

Table of Blood Examinations.

—	May 29th, 1913.	Oct. 16th.	Dec. 17th	March 13th, 1914.	April 23rd.	May 22nd.	July 13th.	July 29th.
Red corpuscles	4,824,000	2,360,000	1,800,000	994,000	4,224,000	3,080,000	6,000,000	5,500,000
White "	15,200	38,000	17,800	13,180	16,800	9,100	34,375	23,400
Polymorphonuclears ...	39 %	48 %	48 %	—	84 %	82 %	28 %	65 %
Small lymphocytes ...	53 %	28 %	39 %	—	11·3 %	12·2 %	20 %	14 %
Large " ...	6 %	4·7 %	4 %	—	0·3 %	1·2 %	30 %	2 %
Hyalines	—	—	—	—	—	—	8 %	1 %
Eosinophiles	2%	3·7 %	6 %	—	3·4 %	2·6 %	4 %	—
Myelocytes	—	13·3 %	3 %	—	—	—	8 %	—
Myeloblasts	—	—	—	—	—	—	—	18 %
Mast cells...	—	2·3 %	—	—	1 %	2 %	2 %	—
Hæmoglobin	—	—	25 %	—	60 %	55 %	100 %	70 %
Colour index	—	—	0·69	—	0·71	0·89	0·83	0·63
Hæmolysis	—	—	0·55–0·6 % NaCl.	0·5–0·55 % NaCl.	—	—	0·4–0·45 % NaCl.	0·4–0·45 % NaCl.

On Oct. 16th, 1913, several normoblasts were present. Splenectomy was performed on April 7th, 1914. The difference in the readings of subsequent dates should be noted.

The production of the jaundice in some of these cases is probably not entirely the result of blood destruction. In the case just related the very deep jaundice at the commencement was not associated with any marked decrease in the number of erythrocytes; indeed, they were at the time only just below 5,000,000 per c.mm., and it is to be remarked that the jaundice lessened coincidently with the diminution in the number of red cells. It would seem, therefore, that the jaundice is in some measure due to changes in the liver, but whether this occurs as a complication or as an essential part of the syndrome must for the present be left undecided. The fact that the liver in these cases is usually enlarged points to the presence of some coexisting abnormality in that organ, but the nature of the pathological changes which occur has not been accurately determined, though it has been noted in those instances in which the liver has been examined post mortem that no cirrhosis has been found. A participating factor in the production of the jaundice might thus be a cholangitis causing sufficient obstruction for a portion of the bile to find its way into the lymphatics and subsequently to appear in the urine, but not severe enough to prevent the escape of bile into the duodenum, thus allowing the stools to be coloured. It is possible that some degree of cholangitis exists in all these cases, and that the occasional presence of bilirubin in the urine is due to an increase of that condition. In the case related above it may be supposed that the initial deep jaundice was caused by a somewhat severe cholangitis which brought about an increase in the icteric tint produced by hæmolysis. With the diminution of the cholangitis the jaundice lessened, though a certain amount remained. After the operation, which appears to have exerted a temporary beneficial effect on the liver, a return of the cholangitis occurred, giving rise to further jaundice and possibly a toxæmia which resulted in the death of the patient.

A fatal termination to the case was very disappointing after the immediate brilliant effects of the splenectomy, and it is to be regretted that no necropsy was held to determine the condition of the smaller bile ducts. In this connexion it may be remarked that two cases of hæmolytic jaundice reported by Dawson[2] were associated with affections of the gall-bladder, one with gall stones and the other with cholecystitis; both of these at one time had bilirubinuria, but it was not constant. Banti also states[3] that when the anæmia is intense a small quantity of bilirubin may be present, and has reported one or two cases in which this was so, though it would now seem open to doubt whether the bile pigment was really due to an increase in the anæmia and not to an inflammatory condition of the smaller bile-ducts. The same author further remarks that under the same conditions a few myelocytes may be found in the blood. This was exemplified in my case.

So far as I am aware no case has hitherto been reported in which the presence of bilirubin and an absence of urobilin in the urine were persistent accompaniments of splenomegalic jaundice. The only one which I have found at all resembling it is Weber's case of persistent slight jaundice[4] already referred to, but in that case urobilin was definitely present on at least one occasion. Moreover, no enlargement of the spleen or liver could be detected, and for this reason it is doubtful whether it should be included in the same category.

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[2] Proceedings of the Royal Society of Medicine, 1914, Clinical Section, pp. 101, 103.

[3] La Semaine Médicale, 1912, vol. xxxii., p. 265.

The cause of the splenomegaly in these cases is unknown, but the influence exerted by the perverted internal secretion of the organ on the hæmolytic resistance of the erythrocytes is shown in the case here recorded. After splenectomy had been performed the red cells not only increased in number to a remarkable extent, but also regained their normal fragility, while the colour index showed a gradual improvement. Several observers, however, have found that there has been very little or no improvement in the fragility after the removal of the spleen, but observations, as a rule, have only been recorded for a brief period after operation. In a few cases, on the other hand, as in my own, the fragility has been diminished, but in some instances an improvement has not been noticed until some time after the operation.

A record of the subsequent histories of all these cases in which splenectomy is performed is very desirable. The operation, so far, has been fully justified by its results. Thursfield and Gow[5] have collected ten cases, with an additional two in which the diagnosis was doubtful. In all of these except one, in which death occurred from sepsis of the pedicle, the operation was followed by good results, and Banti even goes so far as to say that "in that group of hæmolytic jaundice in which splenomegaly represents the primitive and principal lesion surgical treatment succeeds in curing rapidly and radically that jaundice which treated in another way would certainly have a fatal issue."

Remarks by MR. H. W. CARSON.

The removal of the spleen in these cases is rarely a difficult operation. The spleen is large, firm, and generally fairly free from adhesions. There are three main rules, common, it is true, to all abdominal operations, which must be emphasised in the operation of splenectomy—namely, free exposure, delicate handling, and careful hæmostasis. Most of the difficulties can be avoided by making a free incision. This should be a vertical incision through the upper part of the left rectus, much the same as the incision for cholecystectomy on the right side. It should vary in length according to the size of the spleen, but will generally extend from the costal margin to the level of the umbilicus. After opening the abdomen, the presence of adhesions must be ascertained, and before anything else is attempted all adhesions must be cleared, not by breaking down, but by clean division after clamping. If the adhesions are broken down roughly, there may be a considerable amount of hæmorrhage the control of which may prolong the operation unduly. The spleen, freed from adhesions, is then lifted out of the abdomen and the pedicle tied. Occasionally the veins of the pedicle are very thin-walled, and care must be taken in lifting the spleen out of the abdomen that no strain is thrown on them. The pedicle is tied off with interlocking ligatures of thick catgut, reinforced by an additional ligature including the whole stump, and the spleen cut away. A careful examination of the cavity from which the spleen has been removed, including the under surface of the diaphragm, methodically done under a good light to detect the slightest hæmorrhage, completes the operation, and the abdomen is closed without drainage. The immediate result of the operation for the disease under consideration is, in the few cases recorded, very good. The dangers of the operation, shock, sepsis, and hæmorrhages, are all preventable, and this patient seemed to feel the operation very little. Whatever the exact physiological effects may be of removal of the spleen, clinically the improvement in this case was surprising. A fortnight after operation the child had lost her jaundice, and instead of being depressed and listless she had a good colour and seemed bright and active. The improvement was only temporary unfortunately, but immediately the operation had a very profound effect.

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[4] Transactions of the Clinical Society of London, 1903, vol. xxxvi., p. 247.

[5] St. Bartholomew's Hospital Reports, vol. l., part 1.

PITYRIASIS ROSEA OF GIBERT.

BY E. GRAHAM LITTLE, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN IN CHARGE OF THE SKIN DEPARTMENT AT ST. MARY'S HOSPITAL, PADDINGTON, AND AT THE EAST LONDON HOSPITAL FOR CHILDREN, SHADWELL.

INSTANCES of a recurrence of the eruption of pityriasis rosea are so rare as to be worthy of record. In a survey of the literature of the disease, which was necessitated by the preparation of a paper read by me before the Dermatological Section of the Royal Society of Medicine in February last, I collected at the most six instances of recurrence, some of which were of doubtful authenticity.[1] The best observed and most precise of these was contributed by Szaboky[2] from Professor Nekam's clinic in Budapest, and as it offers a curious similarity to the case I am about to record I give his description in some detail as follows.

The patient, a male aged 19 years, was seen on Feb. 15th, 1899, when he had an eruption of pityriasis rosea distributed on the upper extremities, the sides and the nape of the neck. The eruption was slightly itchy, and disappeared under treatment within six weeks. Sweating was a prominent feature. In the beginning of April—that is, a few days after the complete removal of the first eruption—recurrence of a similar rash in the same positions as in the previous attack was noted. Sweating, which had diminished after the cure of the first eruption, increased during the new outbreak, which was cured in five weeks. Search for ringworm organisms proved negative. Cultures gave only sarcinæ and bacteria. Inoculations of scales into human beings gave no result.

In addition to this observation, which is the only one I have come across which has been recorded with any degree of precision, there is a very incomplete note by Allen[3] in the course of a discussion on pityriasis rosea, in which he observed that he had seen a patient who had had at least seven attacks, coinciding with periods of abstinence from alcohol, such abstinence appearing to cause disturbance of his digestive functions. These periods seemed to date from New Year resolutions of sobriety, imperfectly kept. Phillips[4] has a note of a curious case which seems to be rather an instance of abnormal persistence of eruption than of recurrence, since no mention is made of intervals of freedom. The record is essentially as follows. When first seen, nine months previously, there had been circinate patches involving trunk, thighs, and arms. These had faded characteristically but had left irregular-shaped patches of eruption symmetrically placed at the sides of the neck, anterior and posterior folds of the axillæ, and over the prominences of the hips. The efflorescence was indolent, rose-brown in colour, dry, finely desquamative, and slightly raised above the surface of the skin, especially at the margins of the patches. Twice during the time that he was under observation the patient had had jaundice. Sherwell[5] makes a casual reference to a case in which he had noted recurrence of an eruption of pityriasis rosea during repeated pregnancies, but the record is too meagre to afford any information of value.

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[1] Transactions of the Dermatological Section of the Royal Society of Medicine, March, 1914.

[2] Szaboky: Monatshefte für Praktische Dermatologie, 1906, vol. xlii., p. 495.

[3] Allen: Journal of Cutaneous Diseases, New York, 1896, vol. xiv., p. 356.

[4] Phillips: Brit. Med. Jour., 1895, vol. i., p. 254.

I now give the details of the case which prompts this note and which is the first instance of recurrence to come under my own notice. In my paper of February I tabulated 174 personal observations of the disease occurring in some 27,000 cases of general skin disease, and in none of these was recurrence observable.

The patient, a boy, aged 5½ years, was brought to see me at St. Mary's Hospital skin department on July 9th, 1914, by his mother. He showed a very typical and definite eruption of pityriasis rosea, distributed in the usual positions on the back and sides of the trunk. The mother said the eruption had begun a week previously with several patches which had preceded the general eruption by a few days, and which could be still identified as being larger, and therefore presumably older, than the rest of the rash. There was much itching, but no other affection of the skin except that there were a few small scars of a recent varicella and three much larger and older scars from a burn sustained in earlier childhood. Scales were examined for fungus with negative result, the diagnosis of "pityriasis rosea with several pioneer patches" was unhesitatingly recorded, and the patient was given a mixture of salicin and potassium citrate and no local remedy ordered. He was seen again by me on July 16th, when a saline aperient was added to his treatment, as he complained of constipation; the rash was unaltered at the second visit. Owing to the absence from London of the mother and the boy the patient was not again seen by me until Oct. 8th, but the history of events in the interval was very clearly given by the mother, who displays exceptional intelligence. She states that she was confined of her second child on July 30th—an event which explains the particularity of her recollection that a few days prior to that date the patient was sent to his paternal grandmother, living at Yarmouth; that before he left she, the mother, noted the state of the boy's skin carefully, as she was afraid the grandmother might have objections to receiving the child, and that when he was actually sent there were only faintly scaly marks with no remaining pinkness of tint which had particularly attracted her attention in the observation of the initial eruption. The grandmother, whose adverse reception of the child had been feared, made no comments, and the boy was returned to his mother's charge on August 10th, but was not critically inspected by her until about August 21st, when she specially noted that his body was perfectly clear of any trace of eruption. In the interval between the 10th and the 21st the boy had been bathed and looked after by his maternal grandmother, who failed also to note the presence of eruption. From August 21st to Sept. 20th the child was regularly bathed by his mother, and no eruption was seen until about the latter date, when a new eruption, exactly like the previous one, was noted on the back and front of the trunk, which took about four days to reach its full development, and was characterised by the same pink colour on which the mother had before laid stress. He was brought to me again, as I have mentioned, on Oct. 8th. On this date I noted a copious attack of typical pityriasis rosea, occupying the front and back of the body, with all the characteristics of the disease corresponding to the duration of the eruption (about 14 days) as given by the mother. There was not any itching with the second attack, but with this exception it was exactly similar to the earlier rash. Scales were again examined for fungus with a negative result, and he was again given a mixture of salicin and potassium citrate, without any local application. He was brought to me for examination on Oct. 12th and Oct. 19th, when the eruption was noted as progressively fainter in colour, and it had completely disappeared by Oct. 26th. He has remained clear up to the present date (Nov. 12th), when he has been discharged from attendance.

There is thus good evidence for stating that the first eruption persisted for five weeks, was followed by an interval of complete freedom of somewhat over a month, and that a second acute attack of the disease with characteristic inauguration and evolution of the eruption persisted for nearly five weeks, when it also disappeared under purely expectant treatment.

Wimpole-street, W.

TRAUMATIC RUPTURE OF THE LIVER; LAPAROTOMY; RECOVERY.

By LEONARD H. TAYLOR, M.B., B.S. LOND.,
MEDICAL OFFICER TO THE KELANTAN GOVERNMENT, PROTECTED MALAY STATES.

CASES of rupture of the liver being uncommon, and the instances of recovery being still more so, I think it may be of interest to publish the notes of this case which came under observation in the Government Hospital, Kelantan.

On June 13th, at 10 A.M., a Tamil woman was admitted with the following history. At 9 o'clock on the preceding morning her husband had returned home drunk, and after bullying her for some time had pushed her through the window of their house into a drain four feet below. He then walked round and jumped on her many times, stamping on her chest and abdomen. Without assistance she was unable to leave the house that day, but in the evening her friends took her to make a report at the police station, and the next morning the officer in charge brought her across river in a native boat and to hospital in a rickisha. On arrival she was seen by the residency surgeon and myself, and the following signs and symptoms were noted. There were no external bruises or cuts. On inspection the abdomen was found to move fairly well; there was, however, marked distension below the umbilicus. On palpation the upper part proved tender, especially over the right kidney. On percussion there was dulness in the flanks, more marked on the right side, and the distension noted above was resonant. The patient's general state was poor, the pulse being weak and rapid, but there was no rise of temperature.

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[5] Sherwell: Journal of Cutaneous Diseases, New York, 1896, vol. xiv., p. 355.

At midday an exploratory laparotomy was made, and the upper part of the abdomen was found to be full of dark blood, which issued in large quantities. On passing the hand in and round over the surface of the liver a tear was found about $1\frac{1}{2}$ to 2 inches in length by $\frac{1}{4}$ inch in depth on the outer surface of the right lobe. The residency surgeon after examination decided that nothing could be done since the wound was out of reach except to the hand, and the patient's state on the table was extremely critical. The abdominal incision was therefore closed up with three interrupted silkworm gut sutures through the peritoneum and all the layers. The patient was then moved back to bed as quickly as possible.

The after-treatment was practically *nil*, for on the day of the operation cholera broke out in the gaol and the hospital patients could only get very scant attention. The dresser, however, reported each day that the patient did not improve and that her pulse could hardly be felt, but on the fifth day I visited the ward and found her sitting up on her bed. From then onwards she improved daily, and 13 days after the operation she left the hospital, refusing to stay any longer.

The wound in the liver might have been packed with gauze to inhibit bleeding, but it was thought that binder pressure over the ribs would bring about the same result, and this seems to have been the case.

Kelantan, P.M.S.

MORPHOLOGICAL TYPES OF BACILLI AS AN ELEMENT IN PROGNOSIS IN PULMONARY TUBERCULOSIS.

By HORACE R. WILSON, M.D., B.S. Lond.,
M.R.C.S. Eng., L.R.C.P. Lond.,
TUBERCULOSIS PHYSICIAN TO THE SOUTHWARK BOROUGH COUNCIL;
LATE TUBERCULOSIS PHYSICIAN TO THE WELSH
NATIONAL MEMORIAL.

During the examination of samples of sputa from cases of varying type there is marked difference in the appearances shown by the acid-fast bacilli, though the greatest care has been taken to render the processes as identical as possible. In one case the bacilli are short, plump, and taking a uniform stain, with a noticeable absence of the clear spaces so frequently seen and which were once considered spores; in another specimen the bacilli are longer and thinner, the clear spaces numerous and well marked, the stain less deeply taken, and, excepting the acid-resisting properties common to the two, quite distinguishable from the first type. Again, we frequently meet with cases midway between the two. Spengler at one time attributed these differences to the human or bovine origin and considered the staining of the waxy envelope responsible for the difference in appearance of the strains of bacillus, but this explanation is not accepted by other authorities, nor is it substantiated by more recent investigation, for the report of the recent Royal Commission on Tuberculosis concludes that the microscopical appearances alone are insufficient to differentiate between the different types of bacillus. Muir and Ritchie in their "Manual of Bacteriology" on this point hold the view that there are the two different strains of organisms which on cultivation resemble in appearance the two types as described by Spengler and mentioned above, which vary in virulence and cultural characteristics. On the other hand is the view that the beaded type is a degenerate strain of that which stains homogeneously, and this view also finds able supporters.

At the International Congress in Brussels in 1910 the following results of experiment were recorded by Maher, of New Haven (Connecticut): "New growths of any strain—avian, human, or bovine—are consistently acid-fast and stain entire, and are of uniform size when grown on glycerine broth, glycerine agar, or glycerine potato broth. Old growths on glycerine broth grow long and filamentous, beaded and granular, say at six months, and partly lost their resistance to acids." In the same connexion Muir and Ritchie state: "We can only say that the younger bacilli stain uniformly and that in older forms inequality in staining is met with. This latter condition is, however, not found to be associated with greater powers of resistance." These observers, however, uphold the optical differences mentioned above as characteristic of the human and bovine bacilli respectively, but add that intermediate forms are met with, and that "in view of these facts it is probable that bovine bacilli will undergo corresponding modifications in tissues of the human subject."

Whether these differences in appearance are due to the fact that the one form is bovine, the other human (Spengler), or that they are respectively the young or old type of bacillus of either strain (Maher), which view is also favoured by myself, the difference has a distinct bearing on the prognosis of the case, and in examining sputum from a tuberculous case it is insufficient to detect the mere presence or absence of bacilli, but their morphological characteristics should be noted as to size, vacuolation, and acid-resisting properties. Variations in appearance of the bacilli coincide as a rule with the virulence of the attacking force, acuter and more florid cases harbouring bacilli corresponding to the young growths and the more chronic cases with fibrosis and old cavities being the hosts of the moniliform type. Either type (whether looked on as "old and young" or "human and bovine") may be conveyed to the lung by inhalation and may be the starting point of infection, and we may take as a prognostic axiom the "younger" the type the more virulent the case.

If certain cases are watched over a long period and the sputum systematically examined the type of bacillus is found steadily to approximate the vacuolated type, and two explanations may be suggested for this. The one explanation is that the bacillus is originally of bovine strain, but under the influence of environment it is gradually adapting itself to human surroundings and at the same time decreasing in virulence; or, secondly, that the original strain, whatever its origin, is losing ground against strong resistance, which view is more in accordance with present opinions cited above.

This leads to another aspect of the question—namely, whether the changes are due primarily to bacillary alteration or to varying resistance in the tissues of the individual infected, the resistance being either acquired or inherited, or to both. A consideration of this aspect gives us four possibilities: (1) a virulent strain of bacillus and poor resistance; (2) a virulent strain of bacillus with good resistance; (3) a feeble strain of bacillus with poor resistance; and (4) a feeble strain of bacillus with good resistance. Whereas (1) leads to an acute rapid case of "galloping consumption" the course of (4) may probably lead to a permanent arrest before much damage is done to the tissues; (2) may lead to degeneration of the tissues and ultimate chronicity, a dangerous type of case from the preventive point of view, and (3) to a slowly smouldering progressive case, probably non-febrile but nevertheless going steadily downhill.

It follows that a knowledge of one's patient and careful inspection of the characters of the bacillus may be of considerable assistance in prognosing the course of a case, and as a result evidence as to the best method of treatment to advise the patient to pursue. Resistance is the predominant factor in influencing prognosis, and all efforts should be aimed at the production of high resisting power, as this is the factor under our control. Given good resistance, fortified by suitable treatment, and the type of bacillus will be found to deteriorate as stated above, while nature erects barriers of connective tissue to the progressive course of the disease, gains time for antibody formation which still further causes degeneration of bacilli, and by contraction of fibrous tissue lessens cavities and controls blood supply, although in rapidly fatal cases the end has arrived before the defensive mechanism has accomplished its work.

What is the ultimate fate of the degenerate bacilli in cases which successfully progress to chronicity? There is no doubt they ultimately disintegrate and that the portions retaining the stain have a dormant existence, and either under the synonyms of Much's granules or Spengler's "splitter" forms can recover vitality under suitable conditions of soil and temperature and become responsible for many cases of relapse or infection. These granular forms should be specially stained for either by Much's modified Gram method or by Spengler's "pikrin" method. Should they be present they are of great importance as proving the patient a carrier of tuberculosis and a public danger. From the prognostic point of view they are of good omen as showing high resisting powers.

In conclusion, I wish to point out that the microscopical type of bacillus considered periodically in conjunction with the general and local condition of the patient is of great assistance in prognosis, and also that the sputum of cases of chronic tuberculosis, asthma, bronchiectasis, and bronchitis should be specially examined for sporadic forms of bacilli, which, with a little extra care, may be recognised by appropriate staining methods, and which are a source of great danger to the public health and a frequently unrecognised focus of fresh infection.

King James-street, S.E.

ISOLATION HOSPITAL FOR SOUTH DEVON.—The Local Government Board recently suggested that a joint isolation hospital should be provided for Dartmouth, Totnes, Kingsbridge, and Salcombe, and a meeting was held at the Dartmouth Guildhall last week to consider the scheme. After some discussion a resolution was passed in favour of the proposal. It was also decided to ask the Local Government Board to send a representative to discuss the whole question, and to consider the advisability of appointing a whole-time medical officer of health for the joint district.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF LARYNGOLOGY.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Nov. 6th, Dr. G. WILLIAM HILL, the President, being in the chair.

Mr. HERBERT TILLEY exhibited microscopic specimens from five cases of Aspergillosis of the Maxillary Antrum seen by him during the past ten years. All the patients were females, and the chief symptoms were sneezing, marked nasal obstruction, severe pain in the cheek, sometimes causing insomnia, slight purulent nasal discharge, and great œdema and opacity on transillumination. There had been difficulty in irrigating the sinuses because the material was semi-solid and of sticky consistency. He had experienced no difficulty in curing the cases by operations, and there had been no tendency to recurrence.—Mr. S. G. SHATTOCK remarked that at first he believed that the disease was a mucinoid endothelioma such as may be found in the abdominal cavity, but that later it seemed probable that it was caused by a mycelium differing from that of thrush, sporothrix, &c. No cultivations of the secretion had been made.—Mr. W. DOUGLAS HARMER referred to a similar case which he had reported in the Transactions which was proved by cultivations to have been caused by aspergillus fumigatus. In that case there had been great difficulty in curing the symptoms, and the most effective remedy seemed to be sodium iodide in large doses.—The PRESIDENT pointed out that iodides are often successful in curing actinomycosis.—Dr. D. R. PATERSON had seen aspergillus infections of the lacrymal sac, and thought that they might be grafted upon old suppuration.—In this connexion Mr. SHATTOCK pointed out that the lung may become secondarily infected with aspergillosis.

The PRESIDENT showed skiagrams of Frontal Sinuses operated on by Good's method. Watson-Williams's metal sounds were seen *in situ*. Good's bone files or rasps were exhibited. He remarked that this method was certainly capable of relieving troublesome symptoms and that the presence of fronto-ethmoidal cells was no contra-indication.—Dr. P. WATSON-WILLIAMS thought that one could not be too enthusiastic about the results obtained by Good's method, even if a free opening could be made. He referred to the possibility of making a perforation through the partition into the frontal sinus on the opposite side in cases where there was a large frontal cell on both sides.—Dr. DUNDAS GRANT considered that the rasp was extremely useful for endonasal treatment of the frontal sinus. He was glad to see that this method was becoming more popular.—Mr. TILLEY thought that a careful record should be kept of the cases in which a perforation had been made. He also referred to the cases where lotion syringed into one frontal cavity returned through the opposite side of the nose.

Dr. IRWIN MOORE showed a case of Abnormal Overgrowth of Nose (bulbous) in a child aged 9. He stated that the child was born with the condition simulating rhinophyma. On cutting into it it was found to consist of fine fibrous tissue with no definite capsule and adherent to the skin and cartilages. Treatment by diathermy was advised.

Dr. MOORE also showed a private patient of Sir StClair Thomson, a case of Stricture of the Œsophagus illustrating the benefits of Hill's tube. He stated that the patient had worn the tube for eight weeks, during which time he had become able to swallow liquids with little discomfort, was relieved of mucous secretion, had gained weight, was much more comfortable, and able to do his daily work.—The PRESIDENT pointed out that his tube was not so well tolerated in cases suffering from cancer of the cricoid region.

Dr. J. COUBRO POTTER exhibited sections from a case which had been referred for opinion by the section. The findings showed it to be a case of perithelioma of the nasopharynx.

Dr. DAN MCKENZIE showed a patient who developed an Abscess of the Frontal Lobe of the Brain, secondary to old-standing frontal sinus suppuration. The abscess was drained through the frontal cavity, and the patient made a good recovery.—Mr. C. A. B. HORSFORD drew attention to the difficulty of making a diagnosis of an abscess in the frontal lobe. In many cases the pus found was extradural.—Dr. P. G. **GOLDSMITH** stated that a frontal abscess might give rise to no symptoms whatever.—Sir **ST CLAIR THOMSON** described a case in which the abscess in the brain was on the opposite side to the sinus.

Sir **ST CLAIR THOMSON** showed a patient, aged 69, whom he thought to be suffering from Early Epithelioma with free movement of the cord. He had suffered from hoarseness for six months. The whole of the left cord was replaced by a red, knobby, ulcerating infiltration. The cords moved well. The rest of the larynx was normal. No enlarged glands. Wassermann reaction negative. No evidence of tuberculosis. He proposed to treat the case by laryngo-fissure.—Sir **FELIX SEMON** thought that it might be some obscure infection, or even tuberculosis.

Mr. G. J. F. **ELPHICK** exhibited a Hæmostatic Guillotine with which he had found it possible completely to enucleate the tonsils with very little loss of blood.[1] It was based on Sluder's method, and had one cutting and one crushing blade which entered between the anterior faucial pillar and the tonsil. On being pushed home this blade remained locked. The protruding tonsil being caught with a light fixation forceps the cutting blade was pushed home between the tonsil and the crushing blade, and the tonsil was lifted out with the fixation forceps. The crushing blade might be left a few moments compressing the cut vessels.

Mr. H. **LAMBERT LACK** showed a patient whom he had treated for extensive Papilloma of the Trachea, and Dr. **GRANT** and the **PRESIDENT** said that they had seen similar cases.

Mr. **HUNTER TOD** showed two cases of Epithelioma of the Tonsil to illustrate the results obtained by diathermy.—The **PRESIDENT** and Mr. **HARMER** expressed the opinion that diathermy was preferable to the knife in all such cases With the former method excellent results could be obtained, and the dangers of operation had disappeared.

MEDICAL SOCIETY OF LONDON.

Discussion on Surgical Experiences of the Present War.

A **MEETING** of this society was held on Nov. 16th, Sir **JOHN BLAND-SUTTON**, the President, being in the chair.

Sir **WATSON CHEYNE** opened a discussion on Surgical Experiences of the Present War. His address is published in full on p. 1185.

Sir **ALFRED KEOGH**, Director-General A.M.S., said he was glad that the subject was being discussed, for any conclusions arrived at would influence the methods of treatment adopted. He was particularly desirous of hearing opinions as to the value of the prophylactic doses of antitetanic serum, and concerning the treatment of wounds from the beginning, and also when they were dealt with under hospital conditions.

Sir **RICKMAN GODLEE** said that he agreed with every word of Sir Watson Cheyne's address. Before long, he thought, someone would rediscover the principles on which Lord Lister had worked. He would like to know what attempts were being made to disinfect wounds as soon as the patients were admitted to the field hospitals. By way of emphasis, he said that Lord Lister had often remarked that if he ever wrote a book—which he never did—the motto would be the words of the Psalm, "My wounds stink and are corrupt because of my foolishness."

Mr. **ARTHUR EDMUNDS** said that it was of course difficult at this stage of the war to generalise from a limited experience, especially as the cases which reached England were to a certain extent selected, the most severe and the most trivial remaining on the other side of the Channel, either because they could not be moved or because they were able to return to duty within a few days. Probably the cases seen in England could be fairly taken as those of medium severity. A great deal was being written about the *morale* of the navy and army. Certainly there was no place where this was more apparent than in the naval and military hospitals of this country; indeed, the extreme fortitude with which the most serious injuries were borne sometimes deceived the surgeon as to their extent. For example, a patient under his care was admitted with a swollen arm and a penetrating wound in the region of the elbow-joint. He complained of no pain, and accordingly was not put among the first batch to be sent down to the overworked radiographer. In due course a radiogram was obtained which showed extreme comminution of the bones entering into the joint. Neuroses were, however, met with, but in these cases the shock or strain had always been of the very severest character, at any rate in the cases which had come under his own personal observation. For example, a marine during the Antwerp expedition was overwhelmed by the collapse of a trench in which he was placed at Lierre. Several shells burst near him, one of which blew a comrade standing close to him to pieces. The patient regained consciousness two days later, but was completely deaf and dumb. He was at first thought to be mentally affected. His ears were full of wax, and Mr. Edmunds therefore took him into the aural department of the hospital so that he might remove the wax and examine his drums. During the process of syringing his ears a few bubbles of air entered the meatus and he obviously heard them. In a few moments with the aid of a little suggestion he could hear perfectly. Mr. Edmunds now attempted to make him utter a sound; this he did with difficulty, but was able shortly afterwards to make simple vowel sounds. He then suddenly asked him his name, and he answered clearly and correctly, exclaiming, "I can speak." He returned to duty two or three days afterwards perfectly well. Another marine, an officer, as the result of mental strain and sleeplessness, suffered from diplopia, but this also disappeared after a few days' rest. Another patient who had been shot through the angle of the lower jaw, the bullet lacerating the muscles at the base of the tongue, also complained that he was dumb, and made known his wants by writing them down. He wrote: "I cannot speak or swallow and my mouth is full of dirt." He was given something to drink and told he could speak. He reacted to the suggestion and had been able to speak, although with some difficulty, ever since. Mr. Edmunds was inclined to consider that the strain was more severe in the case of the navy, although he had no statistics to support this; the waiting to fight, and the ever-present danger from mines and submarines being more trying than the hardships of an active campaign on land. As regards actual wounds the present war had not yielded great surprises. It was, however, interesting to compare the wounds caused by the small fragments of shell which they saw at Chatham with the wounds from rifle and shrapnel fire which they had seen at Plymouth. Apparently the shells used by the enemy in the battle of the Heligoland Bight broke into small fragments which inflicted wounds very much like ordinary bullet wounds. A peculiarity of the German rifle bullet was the facility with which it turned right over; for example, he removed a bullet from a man's buttock which had entered over the sacrum about six inches away. The bullet was lying just beneath the skin with its point turned towards the wound of entry. In this case there was no great laceration of tissues, the wound consisting simply of a bullet track, and he was inclined to think that the bullet had completely turned round before striking, the trivial nature of the injury proving that the bullet was nearly spent. In the simpler wounds the bullet seemed to have passed directly through the tissues, making a small wound of entry and a slightly larger wound of exit, lacerating the intervening tissues very little. This was in marked contrast to the wounds which they saw as the result of the Heligoland fight, inasmuch as in the latter several cases had small wounds of entrance and exit but considerable laceration of the muscles. The probable explanation was that the more trivial bullet wounds were caused by a projectile rotating simply about its long axis, whereas in the naval action the wounds were caused by a fragment of shell moving with considerably less velocity but rotating rapidly around a transverse axis, forming a sort of flying circular saw. The importance of this was that a simple penetrating bullet wound of the soft tissues usually healed extremely readily, almost without suppuration, and beyond disinfection of the skin and the application of a dressing to the wounds of entrance and exit no treatment was necessary. In shell wounds, on the other hand, there was usually a deep cavity containing blood and lacerated tissue which was pretty certain to suppurate, and therefore such wounds should be explored under an anæsthetic and a good-sized drainage-tube inserted. The severer wounds caused by rifle bullets were possibly also to be explained on the theory of the rotation of a bullet about a transverse axis; some of these were superficial gashes which looked as if the skin had been struck by the side of the bullet; in others the extensive wound was probably produced by the high velocity of the projectile; thus in one case a man had a small wound of entrance on the back of the forearm and a wound of exit on the front of the forearm which was a deep chasm of about 4 in. by 2 in., the skin being split as if cut with a knife. He had seen one case in which this almost explosive action of the bullet was well exemplified, the patient being shot through the head of the tibia at about 100 yards range. It might be expected that the soft bone in this situation would be merely penetrated by the bullet, but as a matter of fact it was intensely comminuted, the interior of the bone feeling like a mass of sharp pebbles. In this case he was compelled to amputate the leg on account of the septic condition of the wound and the serious constitutional disturbance. The joint was uninjured, and he believed it might have been possible to save the limb had the patient been in better condition, but he had lain on the field for four days, having nothing to eat but mangel-wurzels, and nothing to quench his thirst but the dew which he could suck off the leaves. He had a small wound on the other leg from which Mr. Edmunds removed a fragment of leaf. He said that this patient's condition was exceptional, the bulk of the men being in excellent condition, and some of them having been wounded only 48 hours previously. As regards treatment in base hospitals in this country the essential point seemed to be to provide free drainage except in the cases which he had already referred to of simple petetrating rifle wounds; every case of a more severe nature had been complicated by a considerable amount of suppuration and sloughing. It would be unfair for those who were working in well-equipped hospitals in England to criticise those who were working at high pressure and often actually under fire abroad, but he would suggest that a more vigorous disinfection of recent wounds might ameliorate a good deal of this sepsis, and he believed that the use of pure carbolic acid should be more frequently adopted. He had had under his immediate notice two cases of extensive wound of the foot, involving the metatarsal bones of the great toe and the adjacent toes. The first of these he opened up, cleared out some loose fragments of bone, sponged the whole wound out with pure carbolic acid, and after putting in one or two drainage-tubes applied a dressing of cyanide gauze wrung out in 1 in 4000 perchloride of mercury. This wound was so severe that he was at first inclined to perform a partial amputation of the foot, and only refrained from doing so as the patient had already had the other leg amputated. This man healed up with healthy granulation, with no exfoliation of bone, and had already got a useful foot. In the other case the patient came under his care at a somewhat later date, but had been dressed within an hour of receiving his injury. The condition of his wound was approximately the same. Mr. Edmunds had treated him by a continuous bath and fomentations, the bath consisting of a tincture of iodine, 1 drachm to the pint. In spite of this there was some spread of the suppuration, the edges of the wound sloughed, and there were several of the pieces of bare bone exposed which must come away before the wound could heal. The difference between the progress of the two cases had been very striking, and was due, he believed, to the more vigorous disinfection which the first man received. The dangers of pure carbolic acid had been, he believed, exaggerated. It must, of course, be applied with discretion and not allowed to run over the skin; its application was for the moment painful, but not more so than tincture of iodine, and in any case it was usually necessary to give an anæsthetic in order to cleanse these cases efficiently. He believed that if in those cases in which there was a lacerated wound, especially one involving bone, it was possible to administer an anæsthetic and scrub the limb thoroughly with soap and 1 in 20 carbolic, cutting and cleaning the nails in wounds of the hand or foot, and then sponging the wound out with pure carbolic acid, very satisfactory results could be obtained. Anæsthetics were, of course, frequently out of the question, and therefore such methods of treatment were not practicable, but he believed that, wherever possible, this thorough disinfection should be carried out. Its utility after two or three days was doubtful, and in these cases it was probably wiser to trust to free drainage and antiseptic dressings, baths, and constant irrigation. In comminuted wounds of joints, where the joint was practically a bag of bones, an excision of the joint might be necessary to provide proper drainage. Another point in treatment was that of the advisability of removing bullets. These could be readily located by the X rays, and their removal did not, as a rule, present any very great difficulty. Shrapnel bullets were perhaps more difficult to find than rifle bullets, especially when they were embedded in muscle; not infrequently the bullet was found to lie in a small bag of pus, even when the wound of entry was completely healed, but very often the wound remained aseptic. In one case a man was shot in the shoulder through the deltoid, the bullet penetrating the thorax, wounding the lung, and coming to rest upon the diaphragm. There were pneumothorax and surgical emphysema over the pectoral and scapular regions, yet in spite of this the man had no symptoms and the bullet was allowed to remain. The possibility of deep suppuration was a reason for removing bullets wherever they were readily accessible; this should never be attempted unless the situation of the bullet could be determined by X ray localisation or other means. The telephone probe was a simple instrument and deserved to be extensively used, especially in the case of shell wounds, in which it was very difficult to distinguish a fragment of shell from the sharp end of a bone. In cases of difficulty—for example, when the bullet was embedded among the muscles of the thigh or buttock—it was a valuable plan to perform the operation upon the X ray couch. An incision was made over the approximate site of the bullet, through the deep fascia; a pair of Spencer Wells forceps was then thrust into the wound, a sterilised towel thrown over the wound and the operator's hands, and the fluorescent screen held over the limb. It was then often possible to seize the bullet and either withdraw it or fix it so that it could be removed with but little further dissection. They had employed antitetanic serum freely with no bad results, and he thought, therefore, that this valuable prophylactic might well be given as a matter of routine. To reserve it for the more severe cases was, he thought, illogical, as it was impossible to determine which cases had been infected with tetanus, and the risk from a small septic wound was not appreciably less than that from severest laceration. As a result of the disaster to the *Amphion* they saw a very curious type of burn from exploding cordite. This was very extensive but extremely superficial, with sharp borders where the clothing protected the part. These healed rapidly and without contracture, the resulting skin resembling an old X ray burn. In conclusion, he would like to mention the excellent results which had followed two operations performed at sea on the hospital ship *China*. One of these was a case of depressed fracture with hemiplegia, which was trephined by Mr. Fedde Fedden; the wound had now healed and the patient completely recovered. Another case was an amputation for an acute emphysematous gangrene of the arm, which had also healed and made an excellent recovery. The success of these two cases was of itself almost sufficient reward for the care and money which had been expended in the equipment of this ship, under the command of Fleet-Surgeon Bolster, R.N.

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[1] THE LANCET, July 18th, 1914, p 168.

Sir FREDERIC EVE said that among the wounded they encountered degrees of septic infection rarely, if ever, seen in civil life. These were, of course, chiefly after shell and shrapnel wounds. In some instances of persistent suppuration examined bacteriologically cultures had always shown streptococci, and in one case B. pyocyaneus. Gas abscesses, probably from B. aerogenes, also occurred in limbs. Needless to say, frequent irrigation with antiseptics, antiseptic baths, &c., were necessary for septic cases. For baths he used a 1 in 10,000 solution of biniodide of Hg. Owing to fighting taking place largely in trenches wounds of the upper extremities, especially of the hands, were very common. There were also many rifle bullet wounds about the root of the neck and shoulders. In these concussion paralyses of a transient character were observed, from the bullet passing in contact with the cords of the brachial plexus. In one case of rifle bullet wound in this region the missile entered on the left side of the neck, paralysing the left recurrent laryngeal nerve, traversed the neck, and emerged behind the right shoulder, without apparently injuring any other important structure. Concussion paralysis of the central nervous system was of interest because it was not seen in civil practice. He quoted a case in which a shrapnel bullet lodged over the junction of the right laminæ of the twelfth dorsal and first lumbar vertebræ, causing complete paraplegia with the exception of the retention of sensation to light touch over the left lower extremity except the foot. The laminæ were not fractured. Nine weeks after the injury power of voluntary micturition was regained, but there was otherwise very little improvement. Time only would show what amount of repair would take place. The experiences of the South African war showed that, in some of these injuries by concussion alone, there was found after three weeks degeneration of the grey matter of the anterior and posterior cornua, whilst in six weeks to two months the cord was converted into a custard-like mass. A somewhat similar injury to the cortex of the brain appeared to have occurred in a shrapnel bullet wound over the left parieto-occipital region, causing right hemiplegia and hemianopsia. At an operation performed abroad a stellate fracture of the skull was exposed, but no depression or injury to the dura. Rapid improvement took place, but nine weeks after the injury there were still weakness of the right side of the face, right arm and leg, profound loss of sensation on the right side, and right hemianopsia with partial mixed aphasia. Skiagrams of two cases of explosive fracture of the femur were shown. In one, union took place in five weeks with only half an inch shortening. Skiagrams of three cases of fracture from projectiles of the lesser trochanter were shown. In all, the missiles—a piece of shell and rifle bullets respectively—were allowed to remain *in situ* and the wounds healed readily, the foreign bodies causing no inconvenience. In two of the cases there was ultimately only 1¼ inch shortening. All the cases of fracture of the femur were treated with Hodgen's splint. Three cases of suppuration of the knee, elbow, and ankle joints treated by incisions, drainage, and irrigation did well. Having treated seven cases of wound of the chest with involvement of the lung, he had been impressed by the small amount of inconvenience produced by a considerable effusion of blood into the pleura, sometimes associated with pneumothorax. For example, an officer received a rifle-bullet wound of the shoulder, which traversed the upper part of the pleura and injured the lung. Skiagraphy and auscultation showed the existence of pneumothorax with hæmothorax as high as the angle of the scapula. No vesicular breath sounds but only distant bronchial breathing were heard. This patient suffered no inconvenience except some shortness of breath while he was proceeding on foot to the dressing station—a distance of half a mile. There was a fair amount of hæmoptysis on the first day, and slight for the three following days. The speaker had only had one case of tetanus which originated from a very slight and aseptic wound of the leg caused by a small piece of shell which was embedded in the tibia.

SECOND INTERNATIONAL EUGENICS CONGRESS.—It had been decided to hold the Second International Eugenics Congress in New York in September, 1915, but the committee now find it impossible on account of the war to arrange for it to be held at that date. The First International Eugenics Congress was inaugurated under the presidency of Major Leonard Darwin in London from July 24th to 30th, 1912.

ENTERIC FEVER AT ST. BURYAN.—As already recorded in our columns, there has been recently an outbreak of enteric fever at St. Buryan, Cornwall, 50 cases having been notified with six deaths, and there appears to be a considerable amount of dissatisfaction that the epidemic had not been more promptly dealt with at the outset. This opinion was expressed at the last meeting of the Cornwall county council, and the Hon. John Boscawen said he could not suggest a remedy unless it was that whole-time medical officers of health should be appointed for each district. A member proposed as a protest that the salaries of the responsible officials should be reduced by the amount of the county council contributions, and that a recommendation to that effect be sent to the Local Government Board. This was carried with one dissentient.

Reviews and Notices of Books.

A Text-book of Military Hygiene and Sanitation.

By FRANK R. KEEFER, M.D., Lieutenant-Colonel, Medical Corps, United States Army. Illustrated. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 305. Price 6*s.* 6*d.* net.

THIS little book, by the professor of military hygiene in the United States Military Academy at West Point, is evidently intended as an elementary introduction to the study of the subject for the use of combatant officers. The subject is clearly treated in a popular manner. The first four chapters give sound advice on the care of troops, recruits and recruiting, personal hygiene, and physical training. The limits of age for recruits in the United States army are 18 and 35 years; the author, from a physiological standpoint, would make 22 the minimum age. Preventable diseases are next dealt with. Antityphoid inoculation is strongly commended. In both army and navy it is now compulsory for all officers and men under 45 years of age who have not had the disease. A few words are said as to the causation of the various specific fevers, but no directions are given as to preventive measures, and it cannot be said that the pages dealing with this part of the subject are of much value. With regard to cholera, for instance, something might have been said, easily intelligible to a non-medical person, as to commonsense measures of prevention. Heatstroke is mentioned, but hardly anything is said as to its causation or how to prevent it. With regard to wool as a material for clothing, its property of heat conservation "makes it most valuable in cold climates, and even in hot ones it is not altogether undesirable." This is indeed a very mild way of putting it. The section on soldiers' boots (or shoes) is excellent, as is the chapter on water-supply. Various methods of sterilisation are described, and boiling is considered to be "the safest, simplest, and most uniformly available." Stress is also laid on the necessity for careful inspection of the source and surroundings of a water-supply, as being the best guide as to its purity. One or two expressions might be corrected; the term protozoa is not applied to the lowest "class" in the animal kingdom (p. 61); neither is it correct to call anopheles "a variety of mosquito which has rather numerous species" (p. 74). The chapter on the use of alcohol is strongly worded, and yet the question is discussed temperately; the author's general conclusion is that "under normal physical conditions alcohol is never necessary, and is usually undesirable."

Genito-urinary Diseases and Syphilis.

By EDGAR G. BALLINGER, M.D., Adjunct Clinical Professor of Genito-urinary Diseases, Atlanta Medical College, &c., assisted by OMAR F. ELDER, M.D. *The Wassermann Reaction.* By J. EDGAR PAULLIN, M.D. Second edition, with 109 illustrations. London: Butterworth and Co. 1914. Pp. 529. Price 16*s.* net.

MUCH progress has been made in the branch of surgery treated in this volume since the first edition appeared, and care has been taken in this issue to include all of the many advances which have taken place. Thus the modern treatment of gonorrhœa is described, the value of vaccine therapy is discussed, and the phthalein test of the functional activity of the kidneys is given fully and stress is laid on its importance. Sections are also devoted to pyelography, the spirochæta pallida, and to salvarsan and neosalvarsan. A special chapter on the Wassermann test has been contributed by Dr. Paullin, who has succeeded in rendering this important test as simple as its natural complexity allows.

Les Universités Allemandes au XXe Siècle.

Par Dr. RENÉ CRUCHET. Paris: Armand Colin. 1914. Pp. 450. Price 4 francs.

THIS book, which was published before the war began, contains many sidelights of special interest at this time. Dr. Cruchet has made investigations during a period of some 14 years into the 20 universities which Germany possesses at the present day, and has embodied the results of his studies in a very interesting book. He began with Bonn, which he visited for the first time in 1900. At Bonn the medical faculty is of less importance than the faculties of theology, law, and philosophy, but the general impression that the place gave to Dr. Cruchet was military. "If," he says, "pacific ideas are spreading among the younger generation of Germany, they must not be looked for in Bonn, where you can almost smell the powder." He revisited Bonn in 1909 and went over the new hospital under the guidance of Professor Siegert, a celebrated physician and accomplished linguist. Dr. Cruchet describes how the learned professor's conversation drifted from purely medical matters into a discussion of the relations between Germany, France, and England; how he pointed out that Germany's one idea was to be friends with France, that England was the real enemy, and Italy untrustworthy. Dr. Cruchet goes on to say that this conversation is an excellent picture of the actual state of feeling at the universities in general, where ideas of blatant pangermanism (*pangermanisme outrancier*) are daily gaining ground. It appeared to him that the offer of friendship towards France was really only an engine of war directed against England. Although all sections of Germans talk about peace, continues Dr. Cruchet, "when even medical men, on the subject of peace, use such language as I have recorded, one cannot help feeling a little dubious."

We need not follow Dr. Cruchet on his pilgrimage to all the 19 other universities, but his visits to Berlin, Leipzig, Jena, and Strasbourg seem particularly interesting. Berlin as a city did not appeal to him, but he was struck by the great improvements in hospital accommodation which had taken place between 1902 and the present day, and, above all, by the Empress Frederic's Post-Graduate Institute, which was opened in 1906.

At Leipzig he found much to admire in the various clinical buildings of the university, but he notes that the physicians and surgeons have an enormous number of patients to look after. Thus Trendelenburg had 400 beds and Curschmann no less than 700. Dr. Cruchet relates a story to the effect that Curschmann one day implied to a colleague, who was professor at a small university, that he had plenty of time to go round his wards in the morning, whereupon the colleague said: "I suppose you go round your wards in a motor-car."

Jena, a university founded in 1557, reached a high level of fame during the reign of the Grand Duke Charles Augustus of Saxe-Weimar (1775–1830), when among its professors were Schiller, Hegel, and Hufeland, the physician. New university buildings were opened in 1909. Jena is unique among universities in that it is intimately connected with, and partially subsidised by, a celebrated scientific and eminently successful commercial firm—namely, the great house of Zeiss. Dr. Cruchet gives a long and most interesting account of the founding of this firm, of its relations with the university, and of the work, both scientific and social, carried on thereby.

Strasbourg naturally filled Dr. Cruchet with very mixed emotions. His trained intellect cannot refrain from admiration of the magnificent buildings of the new German university commenced in 1872, and the newest portion of which, the children's clinic, was opened in 1910. There are four faculties besides medicine, but by far the most important buildings are devoted to medicine and its accessories. The university possesses its own heating, lighting, and power plant, a bakery, a butchery, a laundry, and machine sewing shops—in one word, the note of the university is "thorough."

Dr. Cruchet discusses the German opinion that Germany is the greatest country in the world, and that France is a decadent nation. He tells us that when he and some other French medical men visited the university and the hospital buildings in 1912, the director who showed them round casually remarked as they passed through the bakery, "We can bake enough for six army corps here." Thus, says Dr. Cruchet, even the hospitals, places of peace *par excellence*, are all organised so as to serve when the day comes as bases of supply and revictualling. The final chapter of the book is devoted to a comparison between the decentralised scheme of German university education and the centralised scheme in France, and Dr. Cruchet finds that the German is by far the better.

The whole book is one deserving careful study; it is written by a trained observer, and it is scrupulously fair. Germany is a great country. All her methods do not commend themselves to us, but her foresightedness is worthy of imitation, and the right attitude of other countries towards her may be summed up in the words of the elderly lady of Early Victorian days, who at a prayer meeting of intimate friends observed, "My dears, if we were all as painstaking, as patient, and as quick to seize an opportunity as is the Devil we should all be the better."

The Mental Deficiency and Lunacy (Scotland) Act, 1913 (3 and 4 Geo. V. Cap. 28).

With Introduction, Notes, and Appendices by J. EDWARD GRAHAM, K.C. Edinburgh and Glasgow: Willian Hodge and Co. 1914. Pp. 303. Price 12*s.* 6*d.* net.

FOR Scotland a Mental Deficiency Act was required and was passed, as was done in the case of England, in order to give effect to recommendations made by the Royal Commission appointed in 1904, but in the case of Scotland opportunity was taken to make various amendments in the existing lunacy laws. Hence the title of the Act, Part IV. of which applies to the latter branch of its subject matter. Differences of administrative machinery and in the laws in force regarding lunacy in England and Scotland explain the necessity for separate Acts in the two countries dealing with a subject the importance of which is equally realised in both, similar principles being observed in each statute. The "General Board of Commissioners in Lunacy for Scotland," now known as the General Board of Control, is strengthened by the addition of a medical member, and not more than four medical deputy commissioners, one at least of these being a woman, take the place of the two deputy commissioners provided by the existing Scottish Lunacy Acts.

In Scotland, as in England, a large number of officials and public bodies will have to familiarise themselves with a new machinery, with financial questions, and with duties defined by law, before any general improvement of the condition of the mentally defective can be achieved, and Mr. Graham's book is a carefully and very conveniently arranged text-book which should be found useful by all, including medical practitioners, likely to require its guidance. The latter will find, for example, some useful observations upon the different forms of certificate applicable to lunacy and mental deficiency at the end of the author's clear and instructive introduction, supplemented by notes which are of a critical as well as explanatory character, where certificates are dealt with in the sections of the new statute. The author, it may be mentioned, does not conceal his opinion that a certain amount of haste in getting the measure through Parliament has left traces upon its drafting in places, to some of which he calls attention, and he justifies his observations by the instances cited. He has compiled what should be a helpful work of reference in connexion with its subject fully supplied with appendices, to which no doubt addition will have to be made in future editions, as fresh regulations are added to those already issued.

MISCELLANEOUS VOLUMES.

Dr. Finny's First Aid (London: Thomas Murby and Co. 1914. Pp. 33. Price 6*d*. net) is a useful note-book for ambulance students. It contains the principal facts of anatomy and physiology, various kinds of injuries, and their first-aid treatment, arranged by a lecturer on first aid at Kingston-on-Thames Technical Schools, and interleaved for notes.——Another useful little book on the same subject is *Why and Wherefore in First Aid*, by Dr. N. CORBET FLETCHER (London: John Bale, Sons, and Danielsson, Limited. 1914. Pp. 84. Price 6*d*. net). The question-and-answer method as applied in this little book serves a double purpose. For instance: "In stomach bleeding, why is blood dark and like coffee-grounds?" Answer: "The stomach juices act on and alter the hæmoglobin of the blood." In this case the question directed towards the explanation of a fact would tend with many persons to impress the fact itself on the mind more effectually than would such a question as "What is the character of the blood in stomach bleeding?" But really this is a matter of personal idiosyncrasy in the reader.——A practical little addendum to the first-aid library is Miss THEKLA BOWSER'S *The Whole Art of Bandaging* (London: John Bale, Sons, and Danielsson. 1914. Pp. 108. Price 1*s*. net), which shows throughout the results of her personal experience as a nursing sister of the St. John Ambulance Brigade. It contains many excellent and accurate illustrations.

Mother-craft for Schoolgirls, by FLORENCE HORSPOOL (London: Macmillan and Co., Limited. 1914. Pp. 57. Price 1*s*. net), is the result of the author's own experience as infant visitor to the Swansea corporation, and subsequently of three years' conduct of a "babies' welcome" at which young girls about to leave the elementary schools were trained in the craft of rearing the baby. It gives a description of the methods used in the classes there. The subjects dealt with are washing, weighing, dressing, and feeding the baby, the feeding of the nursing mother, sleep and fresh air, flies, food, baby's ailments, and so forth. Lady Mond contributes a preface. The book is written in simple language in graphic conversational form and is well illustrated. It can be commended.

The perennial *Chavasse's Advice to a Wife* (London: J. and A. Churchill. 1914. Pp. 348. Price 1*s*. 6*d*. net) now appears in its sixteenth edition and 420th thousand, revised by Dr. STANLEY DODD, assistant obstetric physician to Westminster Hospital. This venerable book, which has dissipated the fear of the unknown in maternity and given confidence to many generations of young wives, has been carefully brought into line with modern knowledge, and considerably pruned of its redundancies, without, however, any ruthless sacrifice of its quaint originality. A useful section on sexual hygiene has been added.

The only material other than official information contained in the *Hunterian Society Transactions, Sessions 1910–11, 1911–12, 1912–13, and 1913–14* (London: Headley Brothers. 1914. Pp. 76), edited by Dr. J. TYLOR FOX, consists of an account of the discussion on the uses of tuberculin that took place on March 27th and April 9th, 1913.

JOURNALS AND MAGAZINES.

Brain: A Journal of Neurology. Edited by HENRY HEAD. Vol. XXXVI. Parts 3 and 4. 1914. London: Macmillan and Co., Limited. Price 4*s*. net, or 10*s*. 6*d*. per annum.—This double number of *Brain* contains matter of great interest and importance which appeals both to neurologists and alienists. Dr. David Orr and Dr. R. G. Rows contribute a paper on Lymphogenous Infection of the Central Nervous System, which includes clinical and experimental proof of the importance of the lymphatic system as a vehicle of infective material. It also shows the histological changes which take place as a result of such infection and the manner in which vascular lesions may secondarily arise. Incidentally, therefore, the experiments make clear the mechanism of the production of spinal cord lesions in diseases such as tetanus and rabies.—Dr. Musken's article on a Study of the Posterior Longitudinal Bundle in Relation to Forced Movements is too technical to lend itself to detailed criticism. It seeks to show by experimental and histological examination the intimate connexion of the various structures concerned in equilibration with the posterior longitudinal bundle.—Dr. S. A. K. Wilson's extremely interesting and complete article on the Anatomy and Physiology of the Corpus Striatum, a record of experiments on the monkey, is a very important contribution, and is in many ways supplementary to the same author's monograph on Progressive Lenticular Degeneration.[1]—Professor Mingazzini's article on Aphasia Due to Atrophy of Cerebral Convolutions, without any focal lesions, directs attention to a class of cases of much importance both medically and legally.—Dr. F. E. Batten and Dr. Douglas Wilkinson describe an unusual type of hereditary disease characterised by mental as well as physical symptoms, and Dr. Orton, from the laboratory of the Worcester State Hospital, Massachusetts, contributes a Study of the Satellite Cells in 50 cases of mental disease.—The editor is to be congratulated on an exceptionally interesting issue.

The Burlington Magazine.—The November number of this excellent periodical contains an instructive article by Mr. Arthur Gardner on the sculptures of Rheims Cathedral, the primatial church of France, of which he writes that it "had very good claims to be considered the finest of all French cathedrals, and as such perhaps the supreme artistic creation of the human race." The article is accompanied by some excellent reproductions of photographs of the numerous splendid sculptural groups which adorned the cathedral and especially the magnificent porches, and makes sad reading, as it is impossible not to recognise that hopeless damage must have been done to the building, even though much, or indeed all, of the main fabric may be standing and stable. And the latter supposition is optimistic. An illustrated record of various famous works of art in Belgium is contained in the same number. The loss of life in war, and the unspeakable misery and heavy mortality that follow on its devastating operations are things which must come first in the medical mind, as, we believe, they also come first in the mind of the most enthusiastic connoisseur. But Belgium contains the epitomised lives of artists who have earned immortality, and the destruction of this work is in a sense recent murder. Milton said, "As good almost kill a Man as kill a good Book," thereby recognising the crime of intellectual assassination.

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[1] Brain, vol. xxxiv. THE LANCET, April 27th, 1912, p. 1115.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 21, 1914.

Our Belgian Colleagues.

THE utter ruin which has fallen upon so much of gallant Belgium has destroyed the whole machinery of the medical profession and its adjuncts in that country. There exists no longer in Belgium a medical profession which can either cope with the misery and sickness of the inhabitants who remain, or make any attempt towards the protection of those who may return. We publish in another column an appeal from Professor JACOBS of Brussels, who points out in clear and moving terms the terrible position in which his colleagues and also the pharmacists of the country are involved. The majority of those living in the towns and villages that have been pillaged and burnt are utterly ruined. They can do nothing without help either to assist the population in its present plight or to ward off the effects of epidemic disease. No one can read the appeal without seeing how pressing is the need for immediate aid, and we trust that the Belgian profession will not turn in vain to their British brethren.

A committee has been formed, as has been announced, whose object is to give immediate succour to Belgian medical men and Belgian pharmacists to such degree as the circumstances of war permit. A letter this week from representative members of that committee announces the beginning of the work and appeals for subscriptions. For the moment the giving of assistance at once to the members of the medical and pharmaceutical professions in their daily work is being considered. That much more than this will have to be done, when the time arrives for the complete rehabilitation of this utterly brave and utterly miserable people, is clear. In the great settling up international arrangements will see that the Belgian medical profession is restored completely to its former distinguished place. And before that day arrives it may be feasible to organise a world-wide scheme to better the medical position in Belgium. But at the present moment money is wanted to maintain alive the sick and those who alone can aid them. The inhabitants of the greater proportion of Belgium—those, that is, who remain—are destitute, while the homes of many of them have been burnt or so wrecked and pillaged that the remnants are uninhabitable. The people are enfeebled by misery, shock, and ill-treatment, and as winter approaches many of them will assuredly fall a prey to the first contagious disease that attacks them, while the environment in which they live is congenial to the breeding of any infection. Prompt medical treatment is necessary to succour them, and the strictest care will have to be exercised to protect them from the onslaughts of epidemic disease. And the doctors and pharmacists on whom the task devolves are themselves as ruined as their ruined patients. They are quite helpless to discharge their duties unless material aid is promptly found for them, and the majority of them who remain in the country are unable to maintain an existence there. Their source of income is gone, their surgeries and offices have been destroyed, while the laboratories and business premises of the pharmacists have also perished on all sides.

The situation is so appalling that any attempt to describe it appears to belittle it, while the plight of the Belgian doctors and pharmacists who are here among us as refugees is also truly deplorable. We sincerely trust that our readers will do their best, sorely tried as many of them are by the events of the war, to respond to the plea of their Belgian colleagues. We cannot at once rehouse the Belgian doctors or place the Belgian pharmacists in the position that they enjoyed formerly, as the result of any appeal for money. We know that, though we all believe that these things will follow in due course. The immediate necessity is to help the Belgian doctors and pharmacists as far as the conditions of war permit, so that they in their turn may help their stricken compatriots. Let us all give what we can, for it is our bounden duty so to do.

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Soldiers, Soldiers' Wives, and the Liquor Traffic.

IT appears to be beyond question that a substantial and regrettable amount of intoxication is to be observed at the present time among the wives and dependents of soldiers serving with the colours and also among soldiers now undergoing training in the various centres throughout the country. As a remedy the principal suggestion seems to be that public-houses, either everywhere or in particular districts, should be compelled by law to open later and close earlier. To open them at midday and to close them at 8 or 9 P.M. would be to follow some, at least, of the plans proposed. This method of dealing with the question is, however, liable to sound if obvious criticism. Although to curtail the hours of opening does clearly lessen the period during which persons inclined to drink in public-houses are able to do so, and to that extent saves them from temptation, at the same time, the temptation will still be there when the prescribed hour strikes, and anyone who desires to drink to excess will still find ample time to do so unless his or her occupations prevent it. Soldiers, it may be remarked, do not get much opportunity to drink before midday, and soldiers' wives in most instances will not be prevented by business from becoming intoxicated at some time before 9 P.M. Nor will the latter class as a rule be saved from the opportunity and temptation to drink in their own homes by shorter hours of opening for licensed houses. Such a step would, in short, be nothing more than a palliative of a partial character for an evil which, where it exists, is no doubt of serious consequence to the individuals immediately affected as well as to the community.

The evil has different causes in different classes, and it is quite possible that the degree of its prevalence is liable to be exaggerated. Among women, wives of men serving, who receive a separation allowance, there are two contrasting conditions observable, which may be summarised by saying that some are pecuniarily worse off owing to their husbands' absence, while others are better off than when the wage-earner was with them. These last are the wives of men who when at home, either from selfishness or poverty, or perhaps prudently, keep them short of money, and it is probable that the women who are stated to have "taken to drink" belong largely to this class. Many women, too, no doubt, are feeling lonely and depressed without their husbands, while at the same time they have less work in their homes to occupy them; or perhaps if they have been earning money for themselves have been deprived of their usual occupations through the war. The problem of assisting women in such circumstances without depriving them of their justly due pecuniary allowances is not an easy one to solve, but it is to be hoped that influences may be brought to bear in their behalf which will stem the evil more effectively than the closing of public-houses for a few hours can ever do. It is also to be hoped that the weakness of a comparatively few who attract attention by public misconduct will not be mistaken for a vice affecting a large class which deserves our warmest sympathy. Thousands of soldiers' wives are now living their lives in circumstances of penury, deprived of husbands whose wages before the war were maintaining them in comfort. Thousands also are being made widows, and there is a field for benevolent enterprise among the "deserving" and "undeserving" alike (if such rough classification is permissible) which will long give scope for the energies of more kind-hearted persons than are likely to be found to occupy it. With regard to soldiers, and particularly those newly recruited and undergoing training, there is also the likelihood that the weakness of the few will be assigned as a characteristic to the general body. Here again there is a very immediate need for the assistance of the benevolent, given either in a pecuniary form or in that of personal work. The Young Men's Christian Association and other agencies are doing their best with this object in circumstances of exceptional and peculiar difficulty. Recruits are being trained in large masses, in localities where the opportunities for healthy recreation after violent and sustained exertion are few, and under conditions which are in many instances those of great discomfort if not of actual hardship. It may be highly desirable to forbid them to frequent public-houses after certain hours, or to close those houses earlier than is now done, but it is far better to benefit all alike by providing counter attractions, and opportunities for obtaining wholesome and attractive food and drink wherewith to supplement the meals furnished by the authorities. Moreover, it is to be hoped that as the season progresses the hurriedly improvised accommodation and commissariat of our training camps will be improved and reorganised so as to diminish still further the temptation to have recourse to the wet canteen or the public house.

The conference which took place last week at Caxton Hall, Westminster, under the chairmanship of the Archbishop of CANTERBURY, to consider the problem of alcohol and its relation to the war, was in many ways unprecedented. Discussions of temperance questions have often been a cause of acrimonious controversy among people who admittedly desire the national well-being, but who do not agree as to procedure. Few things are more significant than the way in which men and women of all classes and shades of opinion have been aroused to see the grave peril which faces a nation, which is in the throes of war, in connexion with the abuse of alcohol. One of the last, if not the last, appeal made by Lord ROBERTS was with reference to the subject of treating soldiers, and that he had intended to be present at the conference shows his remarkable prescience in all things that pertain to the welfare of the soldier. The conference was convened by the Bishop of CROYDON, and included among the speakers a number of well-known members of the medical profession, other selected speakers being representative of various interests in religious, political, and social life. It was decided, we believe, by those who planned the conference that questions of legislation should not be dealt with in the resolutions which were to be considered, important though this side of the question undoubtedly is. Many of the speakers referred to it, but attention was confined to what may be called the social aspects of the problem, which in a democratic country are of the greatest importance. Emphasis was therefore laid upon two lines of reform which are the counterpart of one another—viz., a pledge of total abstinence for the duration of the war, and a determined effort to supply the wants of soldiers, sailors, and civilians for suitable recreation and refreshment, apart from temptations to drink.

Annotations.

"Ne quid nimis."

LORD ROBERTS.

Lord Roberts has died, as he doubtless would have wished to die, in harness. What more glorious end could he have had to a long, honourable, successful, and unstained career than to pass peacefully away in performing the great service of heartening his beloved troops in their terrific struggle? This "heartening" faculty of his was conspicuous throughout his career. He applied to all the affairs of men with which he was called on to deal the great principle that is the keynote of modern medicine: "Support the strength and aid Nature to do her beneficent work." Among other visits paid by him in France he inspected an Indian hospital ship in port, and there, as among his Indian troops, the worship and affection with which he was regarded was evidenced in a striking degree. The explanation of this whole-souled devotion to his person that always enveloped him is perhaps to be surmised from the graciousness of his commendation of the hospital ship to its commanding officer: "Your hospital is as near perfection as any I have seen; I congratulate you, sir." Few people, we believe, are aware of the intimate tie that linked him with our profession in that on Jan. 10th, 1901, he was admitted an honorary Fellow of the Royal College of Surgeons of England. And, indeed, as a soldier Lord Roberts excelled in just those qualities that should characterise the ideal medical man—patient and enduring under trial, alert and prescient against unexpected sources of danger, a past-master of his craft, keeping himself ever abreast of its development under rapidly changing conditions, courageous, confident, and resolute in carrying out his carefully thought-out plans, resourceful in emergency, above all petty feeling, humane and love-inspiring in his dealings with all, and relying both for guidance and for justification on the spiritual and moral force that informs the universe. He was truly a great soldier, a great man, a great example; that he should be buried beneath the dome of the metropolitan cathedral of St. Paul, in proximity to Nelson, is a fitting close to his priceless life-work.

THE END OF THE POLYCLINIC.

MANY London practitioners have lately learnt with regret that the Medical Graduates' College and Polyclinic, with which Sir Jonathan Hutchinson's name will always be associated, has ceased to exist. A general meeting of members and subscribers was held at the College, 22, Chenies-street, W.C., on Oct. 28th, when Dr. C. O. Hawthorne, chairman of council and editor of the *Polyclinic*, presided. Dr. Hawthorne explained that the meeting had been called to consider the situation of the College in so far as this was affected by the war. In view of the existing financial position the council were of opinion that the College could not be continued. In its early days the Polyclinic acquired a burden of debt from which it had suffered throughout its career. A scheme for putting it upon a secure basis had been in contemplation, and had times continued normal the council felt confident of carrying this through with a fair prospect of success; but all these plans had been brought to nothing by the unusual circumstances produced by the war, and there was now no option but to close the College. Mr. Lockhart Mummery, the honorary treasurer, then presented a financial statement and expressed the hope that there would be just sufficient funds to meet all liabilities. Dr. Dundas Grant thereupon moved a resolution, which was carried unanimously, approving the council's action in deciding to close the College and authorising the assignment of the lease of the premises to Sir Jonathan Hutchinson's trustees in satisfaction of their claim against the Polyclinic. We feel that the decision of the council, endorsed by the meeting, is the only business-like course to take in view of the financial position of the College. In happier circumstances the Polyclinic might have continued its useful activities on behalf of post-graduate medical education; but it was encumbered with a heavy debt from the beginning, and the complication of the war made its end inevitable.

MEDICAL CHARACTERS IN CHINESE WRITING.

CHINESE writing is a sealed book to by far the majority of the inhabitants of these islands, whose sole acquaintance with even the appearance of the "lettering" (if we may call it so) is confined to marks on pottery, jars of ginger, or chests of tea. Dr. Lucien-Graux, director of the *Gazette Médicale de Paris*, has just issued a most interesting book dealing primarily with Chinese medical characters, but prefaced by a general description of the innate quality (*génie*) of Chinese writing.[1] Chinese characters are not letters but a kind of picture, and in addition to each picture there is a "key picture" which is invariable for all words of the same class. Thus, to give Dr. Lucien-Graux's example, the words calf, ox, cow, bull, heifer, all belong to the same kind of animal, but there is nothing in the letters or syllables which make up the different words to show this. In Chinese, however, all these animals are expressed by different characters, but all these characters have as a portion of their composition a character signifying "bovine race." To make the matter more clear we may refer to one of the few instances of picture writing in English. Most travellers by train will have noticed here and there along the side of the line a large white painted board bearing on it in black a design like this 〰〰〰〰〰〰; when the engine driver sees this he knows that he is approaching a water trough, from which he may take up water during the run. Now if English were written on the Chinese system all such words as ice, snow, rain, mist, pond, fountain, dew, and so on, would be prefaced by 〰〰, the water sign, and any foreigner who knew the key word would at once know that any one of the words mentioned above would have to do with water. There are in use in Chinese writing 214 of these key characters. The medical one is No. 104, and it is made up of two symbols, the one meaning "man," the other, "board" or "plank." These combined mean a man in bed, otherwise ill. To this key character others are added descriptive of various diseases or diseased conditions, but it is difficult to describe them in words without reproducing the characters, however we may attempt one or two. Baldness, for instance, is signified by the "ill" key character in Chinese, Ni;

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[1] Les Caractères Médicaux dans l'Écriture Chinoise. Par Dr. Lucien-Graux. Paris: A. Maloine. 1914. Pp. 276. Price 4 francs.

and a symbol representing a reaped field; jaundice is represented by the "Ni" combined with a symbol representing a ploughed field—i.e., the colour of bare earth. All symbols are not as clear as these two, however, for, to take one at random, dysuria is expressed by Ni and another symbol representing two trees with their branches joined. Why this symbol should have been chosen is, says Dr. Lucien-Graux, a mystery. There are two addenda to the main portion of the work, the one a list of Chinese drugs and materia medica which is mediæval, and the other a translation of a very ancient Chinese document by an unknown writer giving a somewhat pessimistic, but at the same time noble, view of medicine. The writer begins by saying that medicine can only work in accordance with the inscrutable laws of Heaven; for man the mysteries of birth and death are unsolved, and medicine cannot save from death, a truism which was expressed in mediæval times by the line, "Contra vim mortis non est medicamen in hortis." "But," continues the Chinese writer, "the rôle of medicine is all the same an admirable one. She can prolong life, she can heal the multitude of evils which afflict poor humanity, she can fortify morality by preaching virtue and proscribing vice (that mortal enemy to health), and finally she can consolidate nations and peoples by hygienic counsels and recommendations." These are noble words, and with them we take leave of a remarkable work.

A STATE-AIDED INDUSTRY.

THE chemistry of coal-tar colours is so closely allied to that of synthetic drugs and fine chemicals used in medicine that the Board of Trade scheme for encouraging the permanent manufacture of dye-stuffs in the United Kingdom must inevitably promote the synthetic drug industry which until quite recently was wholly neglected in this country. The German firm which introduced diethyl-barbituric acid (veronal) and acetylsalicylic acid (aspirin) into medicine is as well known for its aniline dyes as it is for its synthetic drugs, and it would be difficult to say whether another famous firm is best known because it makes artificial indigo or because it produces salvarsan. If in Germany the manufacture of synthetic drugs has kept pace with the production of dye-stuffs, there is good reason to expect that the establishment on a proper scientific basis of the colour industry in Great Britain will mark the beginning of a new era for the British drug industry. Briefly, the proposal of the Board of Trade is that a limited company should be formed with a large capital of which the bulk would be subscribed by the consumers of dye-stuffs and others interested; the Government would subscribe a certain portion of the share capital and guarantee the interest on a large debenture issue for a term of years. This proposal is made after consultation with the committee on chemical manufactures appointed shortly after the outbreak of war to consider what steps it was advisable to take to promote the coal-tar colour and fine chemical industry. Seeing that manufacturers of medicinal chemicals were well represented on this committee, it would not be surprising to find when the full scheme is unfolded that provision has been made for the development of the drug section of the industry. No doubt theoretical objections to the State interference in industrial enterprise could be raised, but in the case of the industry in question these must be brushed aside for the substantial reason that without State aid the trade could not be developed. Without State encouragement the German chemical industry would never have reached its present vast dimensions, and it is obvious that our manufacturers could not successfully compete with an organisation which has taken Germany more than 40 years to bring to a state of perfection if the Government were to remain indifferent. The overhauling of our methods of chemical education, the removal of obstacles to the use of cheap denatured alcohol, and some modification of our patent law are among the reforms which must inevitably accompany the successful development of this industry, and since a Government department has undertaken to encourage this development these reforms will no doubt be hastened.

TREATMENT OF SNAKE-BITE.

IN the *Indian Journal of Medical Research* (1914, vol. ii., pp. 46–148) Captain H. W. Acton and Captain R. Knowles publish some important investigations into the nature and suitable treatment of snake-bite. In different varieties of snakes the toxicity of the venom varies. The common cobra, *Naia tripudians*, is *the* poisonous snake of India, and this because of its wide distribution and the volume of venom it gives with its bite. The hamadryad, or king cobra, a rarer snake, is also highly lethal. The bite of many of the vipers is fatal, but often after a longer lapse of time. The cause of death after viperine bites may be through local thrombosis, which may lead to pulmonary embolism; more usually it is due to multiple capillary hæmorrhages from the mucous membranes and internal organs. Sometimes death follows from secondary causes such as gangrene. The cobra venom acts differently. It contains two elements, a hæmolysin and a neurotoxin. The latter is the fatal factor. It causes paralysis of the respiratory centre in the medulla, paralysis of the nerve-endings in the diaphragm and respiratory muscles, and death from asphyxia. The shortest period within which death can occur after a cobra bite is about 30 minutes; the longest recorded was 30 hours. As to treatment, the usual remedies have been investigated experimentally in turn and the findings have much practical significance. 1. Ligature: In cobra poisoning the effect is merely to delay the onset of death by preventing the venom from at once getting into the circulation; it is wholly insufficient to save the life of the patient. In viperine bites, however, it will in some instances save life, even though no other measure be used; in others it will greatly prolong life. The local thrombosis induced tends to localise the venom and affords assistance to the application of local remedies. 2. Amputation: Value in cobra bites strictly limited. It must be performed within a few minutes or it is ineffective. In the case of such a bite, however, immediate ligature and amputation is the best line of treatment. 3. Limb compression fails to yield better results than simple ligature. 4. Incision into the bitten site appears to be of not much value, the difficulty being, apparently, that the venom is colloidal in character and being viscid is extremely difficult to express. 5. Much interest attaches to the observations made upon the supposed value of certain drugs, especially potassium permanganate. This drug in the form of crystals is widely used abroad, and is held in a small case, also enclosing a lance. On being bitten it is advised at once to enlarge the wound with the lance and then rub in some of the crystals. This method of treatment is here practically condemned. It is held that supposed "cures" by such means fall into the category of non-lethal cases. It is better to inject subcutaneously 10 c.c. of a 5 per cent. solution of this salt; or, better still, 10 to 20 c.c. of a 1 to 5 per cent. solution of gold chloride. The advantage of the subcutaneous method is that it allows the drug to maintain longer contact with the venom than if the wound is enlarged. There is, however, difficulty in injecting much fluid into a part such as the finger or toe. The zinc salt of permanganate is probably preferable to that of potassium.

BROOKSIDE PARKS AS RURAL AIR-SHAFTS FOR TOWNS.

THE supply of adequate open spaces for towns is a matter which is increasingly attracting attention. Of course, in towns and cities already established the question of expense greatly limits the possibilities. In a paper on Open Spaces and Running Waters, read before the Imperial Health Conference last May, which was attended by delegates from Australia, Canada, South Africa, New Zealand, and many of the Crown colonies, Lieutenant-Colonel G. T. Plunkett, C.B., R.E.,[1] introduced some very practical considerations for our future guidance by calling attention to lost opportunities in London. He first recalled the fact that the Fleet River, which at one time was so broad and deep that ships laden with merchandise used to navigate up it from the Thames at Blackfriars as far as what is now Holborn Viaduct, and which was navigable for barges so late as 1652, was covered up and built over by 1766. Had the future growth of the city then been realised it would have been easy and comparatively inexpensive to preserve a stretch of land from one to two or three hundred yards or more wide, from the Thames upwards along the course of each of those streams which fall into it, widening out as they approach the hills to take in the slopes with their woods and ponds. By preserving all these streams and laying out a strip along each bank adequate open spaces would have been afforded, easily accessible to parts of London now practically deprived of park accommodation. Colonel Plunkett rightly points out that a park completely surrounded by houses can never be quite the same as one that communicates with the open country, which would preserve for the inhabitants the sights and sounds of the country as nature made it, leaving the appearance of the land as nearly as possible as it was while yet untouched by man, with its native trees, plants, wildflowers, and insect and bird life. For such air-shafts as are here contemplated would afford sanctuary for many kinds of birds that will not penetrate into the enclosed spaces which constitute our present parks and squares. It would therefore be better, he contends, instead of trying to form a ring of open spaces, necessarily more or less irregular, round a large city, to arrange that these spaces, wherever possible, should radiate from the central and more thickly populated districts and stretch outwards into the country like the spokes of a wheel. A strip of park, with an average width of perhaps only two to four hundred yards, but two or three miles or more in length, extending to the open country, would be far more valuable than an equal area in an enclosed square or circular plot. Even in London the most suitable ground to take up for parks, he considered, would be that along the course of our rivers and brooks; and still more important is it that in newer cities parks should be thus laid out along the banks of rivers and streams. It is gratifying to learn that this principle is being acted on by the Wimbledon authorities in regard to the Beverley Brook.

1000 CASES OF CANCER OF THE STOMACH.

Dr. Julius Friedenwald presents an extremely careful clinical study of gastric carcinoma in the *American Journal of the Medical Sciences* for November, and as it is based on an analysis of 1000 cases it is worthy of serious attention. About 60 per cent. of his patients were males, and a similar percentage occurred in the fifth and sixth decades. Ulcer of the stomach, on the other hand, falls principally on the third and fourth decades. Heredity did not appear to play any part in over 90 per cent. Dr. Friedenwald thinks that his analysis makes for depreciation of the belief that peptic ulceration is an important precursor of gastric cancer, since even the most liberal interpretation failed to discover symptoms of ulcer in more than three-quarters of his cases. The gastric contents were analysed in 733 cases, and in nearly nine-tenths of these no free hydrochloric acid was found. In a majority of such lactic acid was present, also Oppler-Boas bacilli. Sarcinæ were noted in one-third only and "coffee-grounds" in about two-thirds. Occult blood was found in the stools in 92 per cent., and especially in early cases, though obvious melæna occurred in 21 per cent., and hæmatemesis in 25 per cent. only. Pain and loss of weight were the most constant of symptoms, and anæmia was noted in a large majority. Vomiting occurred in nine-tenths of Dr. Friedenwald's cases; in contrast to the clinical picture of gastric ulcer, both pain and vomiting were notably associated with absence of free hydrochloric acid in the stomach contents. In only one-third was the tumour palpable within six months of the onset. In more than half the cases the growth was pyloric. It is surprising to find that fever was noted in nearly half; it is more often a late than an early symptom. In a majority the duration of life from the onset of symptoms was less than 12 months. Of 128 patients submitted to operations other than exploratory (gastro-enterostomy, gastrostomy, gastrectomy), not one was living at the time of the analysis. Dr. Friedenwald therefore urges earlier exploration, recognising the desperate nature of the malady and the hopelessness of the prospect in cases where the diagnosis has become apparent from clinical symptoms alone.

THE discussion on Surgical Experiences of the Present War, which was opened on Monday last at the Medical Society of London, and of which a full report appears in our columns this week, will be continued on Monday, Nov. 23rd, at 8.30 P.M., by Mr. D'Arcy Power, Mr. Charters Symonds, Mr. R. P. Rowlands, Dr. D. Embleton, and Dr. Ironside Bruce.

AT a meeting of the members of the Lister Institute held on Wednesday last the proposal of the Governing Body to amalgamate with the Medical Research Committee, appointed under the National Insurance Act, was rejected.

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[1] Report of the proceedings of the Imperial Health Conference held at the Imperial Institute, London, May 18th to 21st, 1914. London: The Victoria League, 2, Milbank House.

NOTE ON THE WOUNDS OBSERVED DURING THREE WEEKS' FIGHTING IN FLANDERS.[1]

BY G. H. MAKINS, C.B., F.R.C.S. ENG.,
COLONEL, ARMY MEDICAL SERVICE; CONSULTING SURGEON TO THE FORCES OVERSEAS.

Nov. 12th, 1914.

THE very large number of casualties during the fighting of the last three weeks has thrown immense pressure on the field ambulances and clearing hospitals at the front and also on the base hospitals at Boulogne. The transport of the patients during this period has been much accelerated on the one hand by the fleets of motor ambulances plying between the field ambulances and the clearing hospitals, and on the other by the very much shortened line of communication by rail to the medical base.

Transport Arrangements.

The motor ambulance has fully justified itself in the matter of rapidity and convenience, and although it is not likely entirely to take the place of the horse ambulance, since the latter can be used where the employment of motor vehicles is impossible, yet in the future the number of horse ambulances will no doubt be decreased. The serious disadvantage of motor transport lies in the amount of suffering experienced by the severely wounded; the jolts which on a motor tour only provoke a smile or a growl according to the frame of mind of the tourist as he traverses a stretch of bad surface, prove a terrible experience to the severely wounded man, especially if a fracture is existent. In this particular it is clear that the motor ambulance can never prove a substitute for the more smoothly running ambulance train, and that except in the case of the lightly wounded the portion of the journey performed in the motor ambulance should be kept as limited as possible. For the removal of patients from train to hospital and hospital to ship the motor ambulance has proved invaluable.

The clearing hospital as a unit is working well and has greatly lightened the work which in former campaigns has fallen upon the field hospital. At the same time the duties devolving on the medical officers have been extremely heavy, since at this stage not only have all the wounds been dressed, but many operations have been performed, a certain number of cases have had to be retained and cared for as of too serious a nature to warrant removal to the base, and every patient has received an injection of antitetanic serum, if this has not been already given at the field ambulance.

The ambulance trains are now equal to the necessities of the position, all furnish the primary requirement of intercommunication between the separate wagons, they are well equipped with medical and surgical stores and food, they are capable of being heated, and carry the staff of medical officers, nurses, and orderlies necessary for the care of the men and the dressing of their wounds. Many of the wounded have been arriving at the base well within 24 hours from the moment of reception of their injury. This cannot always be the case, since congestion of the railway may check the progress of the trains, and occasionally difficulty in collection of the wounded men or a temporary stay in the hands of the enemy may involve the loss even of days.

The sudden complete diversion of the line of communication to the new medical base and the consequent need of the establishment of a new series of hospitals has necessitated very strenuous endeavours to meet the wants of the situation, and had it not been possible to transport at once a large number of patients across the Channel, it is difficult to see how the patients could ever have been distributed to the hospitals situated in other parts of France. Happily, in the absence of suitable public buildings of any other nature, the use of the hotels and casinos of the town and its immediate neighbourhood has enabled the stress of work to be dealt with, and ten efficient hospitals are now established.

The Nature of the Wounds.

With the change in the military situation and the character of the fighting, the nature of the wounds to be dealt with has also undergone considerable alteration, the preponderance in the number of shell wounds has greatly decreased, and those inflicted by rifle bullets has risen to probably more than 50 per cent. The wounds are in the main of very severe type; this appears to be dependent on the fact that they have nearly all been received at the short distance of about the 200 yards which separates the opposing trenches, and that many bullets ricochet and acquire irregularity of flight by striking the margin of the trenches. The type of entry and exit wounds is somewhat varied from those produced by the older Mauser and Lee-Metford bullets; there is certainly more irregularity in form and size. One especially striking form is that in which the central round wound has a slit passing from opposite sides, suggesting that the original opening has been enlarged with a knife for purposes of exploration; such wounds are seen mainly on prominent points of the body, such as the margin of the patella or over an outstanding tendon. The number of large stellate exit wounds is also great, the most typical of all being those on the dorsum of the hand. The difficulty of being convinced as to the production of large explosive wounds by rifle bullet, shrapnel bullet, or fragment of shell respectively is very great. The patients positively state many wounds to have been produced by rifle bullets, which offer no resemblance to any type wound. Thus in one instance the whole length of the soft parts of the flexor aspect of the forearm was lacerated and laid bare beneath a persisting bridge of skin formed by two triangles of which the truncated apices were continuous in the centre, while the bases corresponded with the width of the limb at the bend of the elbow and the junction of forearm and palm respectively. The bones had certainly not been struck to increase the resistance. It could only be supposed that the bullet causing this injury must have been revolving around its transverse axis as it passed. This resembles the revolution of pieces of high velocity shell which must be assumed to take place in the many cases in which a quite small entry wound exists, together with a very extensive cavity formed by laceration of the soft parts within the limb.

A remarkable case offering absolute proof of the retention of sufficient heat by a spent bullet to burn the surface of the skin is worthy of mention, since it is the only instance which I have ever seen. A man under rifle fire was twice hit in the legs, and when on the ground thought he felt hot blood trickling over the front of his abdomen. He put his hand under his shirt and found a rifle bullet lying loose. Two days after five separate exact impresses of the bullet were to be seen on the abdominal wall, still bright red, and over two vesication had occurred; thus a burn of the second degree had been produced.

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[1] THE LANCET, Oct. 10th (p. 905) and 24th (p. 1005), 1914.

The multiple wounds produced by the continuous discharge of the machine guns were referred to in a previous note. A remarkable instance is at present under treatment; the five wounds passing transversely from before backwards are in a vertical line on the left side of the head and neck; the highest produced a gutter fracture of the left parietal region (which will possibly cause the death of the patient), the second struck the scalp below, a third bullet entered at the angle of the mandible and remained lodged over the surface of the bone, a fourth struck the mastoid process, and the fifth entered the root of the neck, wounding the carotid and jugular, between which vessels an arterio-venous communication of the aneurysmal varix type now exists.

Gangrenous Cellulitis.

The presumption expressed in a former note that the occurrence of gangrenous cellulitis might become rare with the establishment of more rapid means of transport has, unhappily, not been substantiated. A considerable number of these cases are still met with both at the clearing hospitals as well as at the medical base.

It has also proved that this condition may develop as the result of a simple rifle bullet wound, and when this is the case the absence of the safety vent afforded by the larger shell wounds may render the extension of the infection a still more rapid process. With regard to the influence of delay in transport on the development of gangrenous cellulitis, this affects only the extent to which the process may have reached when the patient comes under treatment, and can hardly be assumed to favour its actual origination. Experience of the same disease in civil practice needs only to be recalled to emphasise the rapidity with which the infection gains ground and the unlikelihood that any local antiseptic treatment could effectually cut it short.

The influence of the mechanical factor in favouring the spread of the process is well illustrated by the fact that while it spreads readily from wounds involving the deep planes of the limbs, the condition is not observed to develop in wounds of the thoracic parietes, of the abdominal wall, the neck or the scalp. In the latter cases the wounds afford sufficient vent to prevent the development of the tension which favours the extension of the process; again, it is clear that many large gaping wounds are affected locally by the same organism, gas bubbling up in large quantity from their depths while no progressive extension occurs.

Much work in the cultivation of the anaerobic organism is being done by Mr. Rowlands and Sir Almroth Wright.

The rapidity with which the condition develops does, however, vary somewhat, possibly from the degree of resistance possessed by the individual patient, sometimes, perhaps, from the fact that the infection is a mixed one, but certainly in direct proportion to the mechanical tension which exists in the affected limb, and which is usually dependent on the size and nature of the wound.

The advent is not heralded by serious general symptoms, neither the temperature nor pulse-rate rises very high, and there is little pain. The most striking features in the later progress are sleeplessness, the development of extreme anæmia, and a peculiar slackness in the tension of the pulse. The patients meanwhile take their food well, smoke cigarettes, and make little complaint.

Locally the first signs are rapidly increasing œdema, at first white, later large patches of bronzy redness of unequal depth of tint develop, while at the upper limit of the discoloured area crepitation is palpable. The bubbles of gas are often sufficiently large to raise an elevation which suggests on inspection a small varix of a vein; this is often seen in the areolar tissue over Scarpa's triangle. The glands of the axilla or groin enlarge early, but they are hard, not very tender, and never reach a large size or suppurate.

After two or three days the portion of the limb distal to the wound becomes cold, pulseless, and gangrenous. The distal gangrene is of the arterial type. The limb in cases which survive long enough mummifies, and a very sharp line of demarcation develops. Some of these limbs are intensely black in colour.

Only a small proportion of the cases present the typical tense limb with a "marbled" surface, but these are occasionally seen; in one which came under my notice the tense swelling not only involved the whole lower extremity and the trunk as high up as the angle of the scapula, but the penis and scrotum also attained a huge size. In a more frequent variety the proximal portion of the limb acquires a peculiarly soft boggy feeling with deep crepitation, especially along the vascular clefts; these are instances of a mixed infection, commonly with streptococcus. This seems evident, as in many cases which improve the anaerobic organism dies out and streptococcus cultivations only can be obtained from the wounds. The active hæmolytic change produced by the organisms is not only evidenced by the staining of the surface of the limbs, but also by the colour of the serous exudation from incisions made to relieve tension which are of a brilliant orange tint.

It is a very unusual surgical experience to have so frequently the opportunity of palpating surgical areolar emphysema as we have here. In one hospital the sign may be elicited successively in cases of wound of the trachea or lung, in cases of injury to the colon, and in limbs the subjects of emphysematous gangrene.

Treatment of Gangrene.

With regard to the treatment of the cases of gangrene no satisfactory method has been discovered. There is no doubt that multiple incisions made at the limit of advance of the process check it and bring it to a standstill, and some benefit has been claimed from the method of injecting hydrogen peroxide in the same region, although I have seen little to support the opinion myself. The adoption of this method, however, lands the surgeon in a serious difficulty, since in spite of the arrest of the gangrenous process the perished limb persists as a source of septicæmia, hectic develops, anæmia becomes extreme, and the patient succumbs before the opportunity for the performance of a secondary amputation arrives. A considerable difference exists in this respect, however, between the treatment of the upper and lower extremities. In the former a considerable proportion of the cases survive, while of the latter the large majority of the patients die from shock and septicæmia during the next 36 hours if the amputation needs to be made through the thigh. In either case the only chance of securing a success lies in fashioning short flaps and leaving the stump completely open, for in all suppuration or an extension of the gangrenous process follows if the stumps are closed.

It is of interest to note that we are meeting with other forms of gangrene, the purely mechanical due to the degree of injury to the soft parts, embolic arterial gangrene following injury to the great vessels, and already some instances of frost bite of the toes.

ALCOHOL AND THE WAR.

A conference took place at Caxton Hall, Westminster, on Thursday, Nov. 12th, under the chairmanship of the Archbishop of Canterbury, the object of the conference being to consider the problem of "Alcohol in its Relation to the War."

The Archbishop of Canterbury opened the meeting by referring in some detail to the reports which had been received of intemperance both among soldiers in training and also among their dependents. He did not feel, he said, that the blame attached so much to those who had fallen into this temptation, but to those who had placed temptation in their way or who failed to hold out the helping hand to those who particularly needed help. He believed that the situation could best be met by the wide adoption of a pledge of total abstinence for the period of the war, a view he had already expressed in a letter to the *Times*. By this act of self-denial those at home could show their sympathy with those at the front.

The first resolution recognised that as a result of the war there had been a grave increase of intemperance and pledged the members of the conference strongly to support Lord Kitchener's appeal for national help in this situation. Lord Roberts had signified his intention of being present and had been invited to propose a resolution to this effect, but he wrote a letter explaining that as he was going to France to see the Indian troops he could not be present. His place was therefore taken by Sir Clifford Allbutt.

Sir Clifford Allbutt bore testimony to the good behaviour of the troops quartered at Cambridge; at the same time he fully recognised the extent of the evil. He stated that science had made it clear that healthy people are all as well, or better, without alcohol as with it, and referred to the theory, wrongly included under the head of Darwinism, that the evil would settle itself when those who have cravings for alcohol have been eliminated. He contended that the problem of to-day was not so much one affecting individuals as communities. If we wanted to see a strong community we must get rid of class distinctions and seek to help one another, and especially the dependents of those who were serving their country in the war. The public-houses had unfortunately been for many the only place for social gathering, and it was most important that other attractions should be provided.

Cardinal Bourne, Archbishop of Westminster, in seconding the resolution, fully corroborated the Archbishop of Canterbury's statement as to the dangers of the moment in relation to alcohol. Emotions, he said, were gravely excited where men were leaving home to go to posts of peril, while those who were left behind were in distress and anxiety. He advocated further restrictions in the hours of opening public-houses.

Sir Thomas Barlow then proposed the second resolution, which recommended the general adoption of the suggestion that people of all classes should join in a pledge of total abstinence during the continuance of the war. Seeing that the resolution proposed a pledge of total abstinence for men in the services and civilians at home, he dealt with a difficulty felt by some as to the possibility of pure water being obtained by the troops. He said that, having carefully inquired into this subject, he was assured that under the excellent sanitary system initiated by the Army Medical Department there would be no difficulty of this kind. He referred to the occurrence of sexual disease, nine-tenths of the cases of which were believed to be mainly the result of alcoholism, saying that if we want to send our young soldiers across the Channel without any disability we must stop alcoholism. He had been told that when the German regiments first started out their behaviour was all that could be desired, but when they had been in the wine cellars lust, cruelty, and pillaging took place. He desired to emphasise the fact that the evil was an insidious one, and must be resolutely met by getting public authorities to do their duty, by providing other attractions and promoting a true sense of brotherhood, and particularly by renouncing the use of alcohol for the sake of others.

The Rev. J. Clifford, D.D., seconded the motion in an eloquent speech, pointing out how many of the troops were already total abstainers, including a very large proportion of the Indian troops.

Major Leonard Darwin proposed the third resolution, which stated that "immediate steps would be taken in every locality to secure that proper provision be made for the supply of suitable places of recreation and refreshment both for men and for women, where there would be no temptations to drink." He also urged the carrying into effect by local authorities of the Temporary Restriction Act, 1914.

A fourth resolution determined that a manifesto should be drawn up embodying the principal resolutions, and that this should be sent to Lord Mayors and mayors, urging them to take the lead in carrying out the proposals.

All the resolutions were carried unanimously.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Meeting of Council.

An ordinary meeting of the Council was held on Nov. 12th, Sir W. Watson Cheyne, the President, being in the chair.

The Secretary reported the death on Nov. 8th of Mr. Charles Barrett Lockwood, member of the Council. It was resolved to send a vote of condolence to his family.

It was resolved to grant diplomas of Membership to 67 successful candidates.

On the recommendation of the finance committee it was resolved to make a donation of 200 guineas to the National Relief Fund.

It was resolved to grant a pension to Mr. William Pearson.

Sir Frederic Eve was appointed a member of the committee of management in the vacancy occasioned by the retirement of Sir W. Watson Cheyne.

It was resolved to restore to the Membership of the College a Member who had been removed.

A letter was received from Lady Howse thanking the Council for their resolution of sympathy on the death of Sir Henry G. Howse.

The President reported that the Bradshaw lecture would be delivered by Sir Frederic Eve on Tuesday, Dec. 15th, at 5 P.M., and that the subject of the lecture would be Pancreatitis.

The English Conjoint Diplomas.—A recommendation from the committee of management of the Royal College of Physicians of London and the Royal College of Surgeons of England to alter the existing regulations for the admission to the Final Examination of the Conjoint Examining Board of students from recognised colonial, Indian, and foreign universities, has been approved and adopted by the councils of the two Royal Colleges. The revised regulation lays down that members of such universities who shall have passed such an examination or examinations at their Universities for the degree of Doctor or Bachelor of Medicine or Surgery as shall comprise the subjects of the First and Second Examinations of the English Conjoint Board, and who shall have completed the curriculum of medical study required by the regulations of the Board, will, two years after having passed such examinations, be eligible for admission to the Third or Final Examination for the L.R.C.P. and M.R.C.S. diplomas.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet-Surgeon James William Wilcocks Stanton has been placed on the Retired List.

The following appointments have been notified:—Staff-Surgeon: G. L. Buckeridge to the *Halcyon*. Temporary Surgeons: E. G. Fisher to the *Colleen*, additional, for Haulbowline Hospital Yard; and E. I. Parry to the *Indus V*.

The undermentioned have been promoted to the rank of Staff-Surgeon in His Majesty's Fleet: Thomas Creaser and Harry Marmaduke Langdale.

The undermentioned have been entered as Surgeons for temporary service in His Majesty's Fleet: Harry Oliver Blanford, George Muir Fraser, David Alexander Henderson, Eric Ambrose Linell, Matthew Neilson, John Pratt, Alfred George Sworn, Arthur Hyde Wear, John Philip Walker, Joseph Henry Bennett, and Clement Wheeler Wheeler-Bennett.

ADMINISTRATIVE SERVICES, ROYAL NAVAL DIVISION.

Fleet-Surgeon Arthur Gaskell, R.N., to be Assistant Director of Medical Services (dated Sept. 22nd). Captain F. Casement, R.A.M.C., to be Deputy Assistant Director of Medical Services with the temporary rank of Captain in the Royal Marines (dated Aug. 21st).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Herbert E. Cree is retained on the Active List under the provisions of Article 120 of the Royal Warrant for Pay and Promotion, 1913, and to be supernumerary (dated Nov. 27th).

George Seaton Buchanan is granted temporarily the honorary rank of Lieutenant-Colonel (dated Nov. 17th).

Major Robert J. Blackham, C.I.E., is seconded for service under the Government of India (dated Nov. 4th).

The undermentioned to be temporary Captains:—Dated Nov. 1st: Edward Kenneth Martin, Alfred Edward Johnson, and Robert Davies-Colley.

Temporary Lieutenant F. S. Brereton, late Captain, Royal Army Medical Corps, to be temporary Captain (dated Nov. 13th).

The undermentioned to be temporary Lieutenants: Dated Sept. 30th: George Leonard Grant. Dated Oct. 22nd: Trevor Richard Snelling, Richard Charles, Henry Charles Cadell Rennie, and Charles John Edgar. Dated Oct. 23rd: Arthur de Winton Snowden. Dated Oct. 24th: Roland Ravenscroft Wettenhall, Michael Joseph Kelly, Arthur Seal Blackwell, Evan William Griffith, Arthur Gibson Leitch, David Neilson Knox, William Wright Mackarell, John Boyd Orr, James Gray Duncanson, Maurice Patrick Scanlon, and Ernest Alfred Tozer. Dated Oct. 25th: Robert Williams Michell and Charles McMoran Wilson. Dated Oct. 26th: John MacInnes. Dated Oct. 27th: Warren Meade. Dated Oct. 28th: Thomas Henry Agnew and Martin Wentworth Littlewood. Oct. 29th: David Winthrop Woodruff and Robert Lee Brown. Dated Oct. 31st: John Burd Wood. Dated Nov. 1st: James Wilson Richardson, William Nicholas Alexander, Archibald Francis Wright, Horace Arthur Cutler, Arthur Geden Wilkinson, Hugh Young Riddell, Edward Francis Palgrave, Richard Picton Rosser, Charles Edgar Holton Smith, David James Melville Legge, William Robert Addison Coates, Reginald James Rogers, Herbert Lincoln Hatch, Stephen Barry Walsh, James Kilian Clarke, George Ernest Vilvandré, Peter Drummond, David John Evans, and William Anketell Leeper Dunlop. Dated Nov. 2nd: Charles Lester Graham, Charles Derwent Pye-Smith, Harold Mowat, William Alexander Hislop, John Norman Glaister, John Alexander, Francis Kenneth Kerr, Alexander Gordon Gilchrist, Thomas Boston Johnstone, Charles Murchison Bernays, Charles Ashley Flintoff, Ralph Stuart Renton, Lawson Cairns, Richard Bevan Llewellyn, Edward Daniel Parsons, Robert Crothers, Arnold Leeming, Peter Hamilton Robertson, Percy Gonville Lock, Laurence William Pole, William Tregenza, and Robert Thomson. Dated Nov. 3rd: Octavius Studdert Maunsell.

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officers:—Lieutenants to be Captains: Dated July 29th: Percival Sandys Connellan, John Alexander Sinton, Eric Edward Doyle, Cyril Macdonald Plumptre, Archibald Wallace Duncan, Henry Lewis Barker, and Edward Austen Penny.

The King has approved the retirement of Lieutenant-Colonel George Yeates Cobb Hunter (dated Oct. 25th.)

The services of Lieutenant-Colonel S. E. Prall have been placed temporarily at the disposal of the Government of India. Captain M. A. Nicholson has been appointed to act as Civil Surgeon, Jacobabad, in addition to his own duties. Captain Robson has been posted to the Punjab. Major McConaghy has been posted to Bhopal as Agency Surgeon. Major Wilson has been posted as Medical Officer to the Mewar Bhil Corps. Major Hugo has been posted to Kashmir as Residency Surgeon.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Home Counties Field Ambulance:—To be Lieutenants: James Evan Turle and Charles Hebden Gregory.

4th London Field Ambulance: To be Captains: George Earnest Nash and Lieutenant Alfred J. Williamson.

5th London Field Ambulance:—To be Captains: Sydney Clark and Charles Ernest Whitehead.

6th London Field Ambulance: Francis Rowland to be Captain.

1st North Midland Field Ambulance: To be Lieutenants: Ronald Briers Berry, Matthew Thomas Ascough, and John William Thomson.

2nd North Midland Field Ambulance: Captain Richard M. West to be Major.

3rd North Midland Field Ambulance: To be Lieutenants: Charles Christopher Grummitt and Wilfrid Anthony Legh Jackson.

3rd Northern General Hospital: Frank Arthur Hepworth to be Captain.

2nd West Riding Field Ambulance: Charles Nixon Smith to be Lieutenant.

1st London (City of London) Sanitary Company: Martin Priest to be Lieutenant.

1st Welsh Field Ambulance: Major Evelyn J. R. Evatt to be Lieutenant-Colonel (temporary).

3rd Welsh Field Ambulance: Major Andrew R. Wilson, from Attached to Units other than Medical Units, to be Lieutenant-Colonel.

1st London (City of London) General Hospital:—To be Captains: Thomas Jeeves Horder and Conrad Meredith Hinds Howell.

3rd London General Hospital: Lieutenant-Colonel Sir Rickman J. Godlee, Bart., K.C.V.O., resigns his commission. Major Bilton Pollard resigns his commission on account of ill-health. Major Sir Alfred P. Gould, K.C.V.O., to be Lieutenant-Colonel. Captain James E. Lane to be Major (to remain seconded). Captain Arthur F. Voelcker to be Major. Captain Sir John Bland-Sutton to be Major. Richard Robert Cruise to be Captain.

Notts and Derby Mounted Brigade Field Ambulance: Major Alexander R. Tweedie to be Lieutenant-Colonel. Captain Walter H. Fisher to be Major. Douglas John Marr to be Lieutenant.

1st South-Western Mounted Brigade Field Ambulance: Major Thomas H. Haydon to be Lieutenant-Colonel. Captain Alexander W. French to be Major.

1st Southern General Hospital: Major James T. J. Morrison is seconded.

3rd West Riding Brigade: Surgeon-Captain Archibald W. Cuff to be Surgeon-Major.

2nd East Lancashire Field Ambulance: Captain Alexander Callam is restored to the establishment.

2nd London Sanitary Company: James Clayton to be Lieutenant.

2nd East Anglian Field Ambulance: James Simson to be Lieutenant.

2nd Home Counties Field Ambulance: Frank Scroggie to be Lieutenant.

2nd Lowland Field Ambulance: James Wilson Burton to be Lieutenant.

3rd West Riding Field Ambulance: Oswald Frank Buxton to be Quartermaster, with the honorary rank of Lieutenant.

2nd Northern General Hospital: Douglas Seaton to be Captain.

2nd Scottish General Hospital: Captain David J. Graham to be Major.

4th Scottish General Hospital: James Robertson Riddell to be Captain.

Attached to Units other than Medical Units.—Lieutenant-Colonel John Macfarlane Cadell, retired pay (late Indian Medical Service), to be Major. Captain Haldinstein D. Davis is seconded. To be Captains: Henry William Williams, late Captain, Royal Army Medical Corps (Territorial Force), Lieutenant Robert N. Wallace, and Lieutenant George D. Collen. To be Lieutenants: John Leslie Green, Herbert Robertson, Philip Henry George Gosse, George Jackson Wilson, Wilson Howard Morrison, Henry Edward Fox, and Percival Thomas Rutherford (late Second Lieutenant, 4th London (Howitzer) Brigade, Royal Field Artillery).

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Captain Frederick W. Sydenham, from Attached to Units other than Medical Units, to be Captain.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8083 births and 4517 deaths were registered during the week ended Saturday, Nov. 14th. The annual rate of mortality in these towns, which had been 13·8, 13·5, and 13·4 per 1000 in the three preceding weeks, further fell in the week under notice to 13·0 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 13·5, against 14·0 per 1000 in the metropolis. Among the several towns the death-rate last week ranged from 2·7 in Great Yarmouth, 3·0 in Carlisle, 5·2 in Wimbledon, 6·6 in Gillingham and in Eastbourne, and 6·7 in Devonport, to 17·6 in Blackpool, 17·8 in Merthyr Tydfil, 18·6 in Huddersfield, 22·3 in Newcastle-on-Tyne, and 22·5 in Liverpool.

The 4517 deaths from all causes were 147 fewer than the number in the previous week, and included 454 which were referred to the principal epidemic diseases, against 472 and 497 in the two preceding weeks. Of these 454 deaths, 167 resulted from measles, 131 from infantile diarrhœal diseases, 58 from diphtheria, 42 from scarlet fever, 39 from whooping-cough, and 17 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3, or 0·1 per 1000 less than that recorded in each of the two preceding weeks. The deaths attributed to measles, which had increased from 67 to 146 in the four preceding weeks, further rose to 167 last week, which was the highest number of deaths from this cause recorded in any week of this year; the highest death-rates from this disease were 1·4 in Plymouth and in Oldham, 1·5 in Edmonton, 1·9 in Huddersfield, 2·0 in Grimsby and in Wakefield, 2·2 in Gateshead, 3·4 in Wigan, and 4·6 in Newcastle-on-Tyne. The deaths of infants (under 2 years), which had steadily declined from 1223 to 169 in the eight preceding weeks, further fell to 131 last week, and included 36 in London, 13 in Liverpool, 11 in Manchester, 5 in Birmingham, and 4 each in Salford, Sunderland, and Rhondda. The fatal cases of diphtheria, which had been 79, 61, and 93 in the three preceding weeks, declined to 58 last week, of which 12 occurred in London 4 each in Liverpool, Manchester, and Middlesbrough, and 3 each in Stoke-on-Trent and Cardiff. The deaths attributed to scarlet fever, which had been 37, 38, and 34 in the three preceding weeks, rose to 42 last week, and included 8 in London, 6 in Manchester, 5 in Liverpool, and 2 each in Bristol, Oldham, Preston, Middlesbrough, and Cardiff. The deaths referred to whooping-cough, which had been 35, 32, and 38 in the three preceding weeks, were 39 last week, of which 11 were registered in London, 3 each in Nottingham and Liverpool, and 2 each in Manchester, Salford, South Shields, and Newcastle-on-Tyne. The fatal cases of enteric fever, which had been 19, 14, and 17 in the three preceding weeks, were again 17 last week, and included 3 in London and 2 each in Bradford and South Shields.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 3071 to 4769 in the 12 preceding weeks, had further risen to 4976 on Saturday last; 751 new cases were admitted during the week, against 657, 598, and 690 in the three preceding weeks. These hospitals also contained on Saturday last 1602 cases of diphtheria, 72 of enteric fever, 62 of measles, and 57 of whooping-cough, but not one of small-pox. The 1153 deaths from all causes in London were 49 fewer than in the previous week, and corresponded to an annual death-rate of 13·3 per 1000. The deaths referred to diseases of the respiratory system, which had been 191, 197, and 193 in the three preceding weeks, further declined to 181 in the week under notice, and were 23 below the number recorded in the corresponding week of last year.

Of the 4517 deaths from all causes in the 97 towns, 194 resulted from different forms of violence and 370 were the subject of coroners' inquests, while 1329 occurred in public institutions. The causes of 36, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Nottingham, and in 75 other smaller towns. Of the 36 uncertified causes of death, 7 each were registered in Birmingham and Liverpool, 4 in Stoke-on-Trent, 3 in London, and 2 each in Bury, Sheffield, and Sunderland.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1071 births and 668 deaths were registered during the week ended Saturday, Nov. 14th. The annual rate of mortality in these towns, which had been 15·0, 14·6, and 15·8 per 1000 in the three preceding weeks, declined to 15·2 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 15·2, against 13·5 per 1000 in the 97 large English towns. Among the several towns the death-rate last week ranged from 5·0 in Motherwell, 6·3 in Ayr, and 8·8 in Kilmarnock, to 18·6 in Dundee, 18·7 in Greenock, and 18·9 in Hamilton.

The 668 deaths from all causes were 28 fewer than the number in the previous week, and included 50 which were referred to the principal epidemic diseases, against 78 and 79 in the two preceding weeks. Of these 50 deaths, 20 resulted from infantile diarrhœal diseases, 8 from scarlet fever, 7 from diphtheria, 7 from whooping-cough, 5 from enteric fever, and 3 from measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·1, against 1·3 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 31, 26, and 24 in the three preceding weeks, further declined to 20 last week, of which 7 were recorded in Glasgow, 4 in Edinburgh, and 2 each in Dundee, Paisley, and Coatbridge. The deaths referred to scarlet fever, which had been 16, 14, and 17 in the three preceding weeks, fell to 8 last week, and comprised 5 in Glasgow, 2 in Aberdeen, and 1 in Edinburgh. The fatal cases of whooping-cough, which had been 9, 14, and 12 in the three preceding weeks, fell to 7 last week, of which 6 occurred in Glasgow and 1 in Hamilton. The deaths attributed to diphtheria, which had been 19, 16, and 18 in the three preceding weeks, fell to 7 last week, and included 3 in Glasgow and 2 in Dundee. The 5 deaths referred to enteric fever were equal to the average in the earlier weeks of the quarter, but showed no excess in any of the towns. The 3 fatal cases of measles, of which 2 were recorded in Glasgow and 1 in Dundee, were also equal to the average in the earlier weeks of the quarter. In addition to the deaths from the above epidemic diseases, a fatal case of typhus was registered in Dundee.

The deaths referred to diseases of the respiratory system, which had steadily increased from 62 to 104 in the eight preceding weeks, further rose to 111 in the week under notice; 32 deaths resulted from different forms of violence, against 17 and 30 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 514 births and 408 deaths were registered during the week ended Saturday, Nov. 14th. The annual rate of mortality in these towns, which had been 15·8, 15·2, and 18·2 per 1000 in the three preceding weeks, fell to 17·7 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 16·4, against corresponding rates of 13·5 and 15·2 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 18·1 in Dublin (against 13·3 in London and 15·3 in Glasgow), 16·6 in Belfast, 15·6 in Cork, 20·3 in Londonderry, 16·2 in Limerick, and 26·6 in Waterford, while in the 21 smaller towns the mean death-rate was 18·1 per 1000.

The 408 deaths from all causes were 12 fewer than the number in the previous week, and included 40 which were referred to the principal epidemic diseases, against 51 and 48 in the two preceding weeks. Of these 40 deaths, 14 resulted from scarlet fever, 10 from infantile diarrhœal diseases, 9 from measles, 3 from diphtheria, 2 from enteric fever, and 2 from whooping-cough, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·7, against corresponding rates of 1·3 and 1·1 per 1000 in the English and Scotch towns respectively. The deaths attributed to scarlet fever, which had been 5, 12, and 6 in the three preceding weeks, rose to 14 last week, and comprised 8 in Belfast, 5 in Waterford, and 1 in Dublin. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 21, 19, and 21 in the three preceding weeks, declined to 10 last week, of which 4 occurred in Dublin and 4 in Belfast. The fatal cases of measles, which had been 7, 7, and 11 in the three preceding weeks, fell to 9 last week, and included 7 in Belfast. The 3 deaths attributed to diphtheria, comprising 2 in Kilkenny and 1 in Cork, were equal to the average in the two preceding weeks. The 2 deaths from whooping-cough were recorded in Belfast, and those from enteric fever in Dublin and Ballymena. In addition to the above, a fatal case of typhus was registered in Dublin.

The deaths referred to diseases of the respiratory system, which had been 60, 61, and 86 in the three preceding weeks, fell to 67 in the week under notice. Of the 408 deaths from all causes, 144, or 35 per cent., occurred in public institutions, and 4 resulted from various forms of violence. The causes of 17, or 4·2 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes did not exceed 0·8 per cent.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Medical Life in Paris To-day.

NOTWITHSTANDING the preoccupations and horrors of war medical life in Paris has resumed its course in all the scientific societies. Naturally, most of the communications concern themselves with the all-absorbing topic of the hour. At the Académie de Médecine, M. Rémond, of Toulouse, has recommended the use of a camphorated saline, obtained by adding camphor (which dissolves in the proportion of 20 centigrammes in 100 cubic centimetres) to any isotonic serum. This camphorated serum, given intravenously, brings about rapid resolution of the morbid conditions in pneumonia and bronchopneumonia. It also favourably influences staphylococcal and streptococcal infections, and seems to offer all the advantages of camphorated oil without any of its disadvantages. M. Fernet recommends the use of two pairs of gloves or socks to overcome cold; cotton gloves or socks are recommended to be worn next the skin, and covered externally with woollen ones. M. Demmler has forwarded a communication of particular interest at the present time, when so many of the wounded are affected with tetanus. Recalling Dr. Verneuil's advocacy of chloral in 20 to 25 gramme daily doses, M. Demmler recommends its administration in a dose of 6 grammes every six hours until torpor is produced, which suppresses the hyperexcitability of tetanus. M. Capitan, who read this communication to the Academy, added that he owed a complete success in a particularly grave case to this method. The Société de Chirurgie received a communication from Dr. Quénu on the treatment of gangrenous wounds in warfare by opening up of the wound and sterilisation by hot air. As immediate primary opening up was a matter for the medical service at the front, M. Quénu's observations dealt only with delayed and secondary incision. After free incision a minute disinfection of the ragged parts of the wound is called for. Spraying and irrigation with pure oxygenated water are very useful for that purpose. This disinfection suffices for small superficial sloughing, but for cases in which the gangrene invades muscular masses and extends deeply recourse must be had to sterilisation of the wound by hot air up to 500° or 600° C. with Gaiffe's apparatus. It is important to cleanse the smallest recesses without dread of destroying muscles. The large vascular and nerve trunks should be avoided. These measures are succeeded on the following days by irrigation with oxygenated water. This method seems to M. Quénu to be the best treatment for partial gangrene and to afford the greatest protection against its spreading and the transformation of a partial into a complete gangrene. M. Toussaint reported two cases in which he showed that Michel's clamps appeared to have brought on phlegmonous complications, which receded after the removal of the clamps and drainage of the wounds. Dr. Paul Thierry recommended in serious cases of septicæmia among the wounded in war the use of hypodermic injections of from 1 to 2 centigrammes of pilocarpine repeated daily. The profuse sweating occasioned, in conjunction with a free ingestion of abundant fluids, causes a veritable lavage of the blood, and removes the toxins from the blood without injuring the red corpuscles. This procedure may give excellent results even in desperate cases.

The Opening of the Winter Session.

At this time of the year the streets of Paris are usually invaded, so to speak, with a cloud of white posters announcing the reopening of the various courses of higher instruction. This year these posters present an extraordinary character, stating, as they mostly do, that such-and-such a professor will be replaced by a colleague, since he has been called up to serve with his regiment. Naturally, the Faculty of Medicine is one of those most affected by this calling up of its professors for military service. Though the courses for the first- and second-year students will continue under almost normal conditions, practically all the other courses have been postponed to the summer session. Courses of internal and external pathology, however, will be held during the winter session, and the clinics will remain open to students. There has been considerable misgiving that the continuance of the regular courses may give an unfair advantage to students exempt from military service or not yet called up, to the prejudice of those who are on service. The Ministry of Public Instruction has accordingly made an announcement which should dissipate these fears. A series of measures have been taken to safeguard the rights of those students who are fighting for their country—cumulative inscriptions, special examinations and courses, and adjournment of the *concours* until the termination of hostilities.

Foreign Bodies in Military Surgery.

At a recent meeting of the Académie des Sciences Professor Lippmann drew attention to the electromagnetic balance devised by the well-known electrician, M. Hughes, which discloses the situation of a metallic substance (e.g., a coin, bullet, &c.) in the body. This apparatus is the more suitable for military use in that it is simple and can be easily constructed at small expense. It consists of an electric battery, an interrupter, and two small induction coils communicating with a telephone, which rings whenever one of the coils is brought into contact with a metallic substance. If the latter is magnetic, as, for instance, a splinter from a shell or a German bullet, the effect is intensified. This apparatus is intended to be of service in searching for bullets wherever an X ray apparatus is not available, and is, of course, an adaptation of an old-fashioned idea.

Right to Practise for Refugee Belgian Doctors.

The Académie de Médecine has decided to seek on behalf of refugee Belgian medical men the right to exercise their profession in those localities—numerous enough just now—which have been deprived partly or altogether of medical aid. Also at the request of M. Borel, director of the Second Maritime Sanitary Area (*circonscription*), the Minister of the Interior has authorised the appointment of Belgian doctors of medicine as ships' surgeons in the French mercantile marine during the continuance of the war.

The Treatment of Captured Medical Officers.

The Société Médicale des Hôpitaux, acting on private information, occupied itself at its last meeting, together with the surgeons, accoucheurs, and specialists who wished to take part, with the fate of their prisoner *confrères*. It seems that some of them, being captured with the troops to which they were attached or the ambulances with which they served, are being treated as prisoners of war, in defiance of the regulations of the Geneva Convention, and that many are interned in camps, fortresses, and barracks without any outlet for their professional services; whereas all being furnished with the regulation brassards should have been liberated. To remedy this condition the Société Médicale des Hôpitaux has directed its secretary to address a letter to the President of the Geneva Red Cross, informing him of this regrettable occurrence, and calling on him to investigate its truth.

A New Chair at the Paris Faculty of Medicine.

A chair in the hygiene and clinical medicine of infancy has been established at the University of Paris. Dr. Marfan, professor of therapeutics in that faculty, has been nominated, at his own request, to the new chair, dating from Nov. 1st, 1914.

Nov. 16th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Italian Army Medical Service.

Surgeon Captain Mendes publishes in a recent number of the *Policlinico* a long article upon this subject which is naturally of interest in Italy where there are already nearly a million men under arms. A short account will show the general similarity in the arrangements of both Italian and British armies. To each regiment of the line, Bersaglieri or Guards, seven regimental medical officers are assigned—a captain in charge of the whole regiment, and two lieutenants to each of the three battalions of which the regiment is composed. In addition there are 6 corporals of the medical corps and 48 orderlies, or 2 corporals and 16 orderlies to each battalion. In action the regimental medical officers are responsible for the regimental dressing station, which has supplies sufficient for dealing with 300 to 350 wounded. From here the wounded pass to the "sezioni di sanità," or divisional ambulances. Each of these is divided into two equal sections. A major is in command of the whole, with 2 captains, 4 lieutenants, 8 corporals, 17 nursing orderlies, and 195 stretcher-bearers, besides the personnel of the transport. The equipment is either carried by mules or in two special wagons containing the technical outfit, eight ambulance wagons, and six ordinary regimental carts. It is provided with two tents, 7 by 7 metres, and 92 stretchers. Each army corps has one "sezione di sanità" to each of its divisions, and an additional one for its reserve troops. The next line is formed by the field hospital, transported by wagons or mules and containing 50 beds. It is under the command of a captain, with two lieutenants, a clerk, a dispenser, a priest, and a staff of 30 men. During action this small field hospital is expected to advance and take up a position near its corresponding divisional ambulance. It is provided with at least four tents, of which two are 9 by 11 metres and two 7 by 7 metres. There is one of these small field hospitals to each division. Behind these come the field hospitals of 100 or 200 beds, forming the first units of the second line, and under the orders of the general in command of the army. Twenty of these field hospitals are allotted to each army. Their staff is proportionally on the same scale as the smaller field hospitals. For the transport of the wounded to the base Italy has been supplied with excellent hospital trains by the "Croce Rossa." Each of these will take 200 cases on stretcher beds. The staff is composed of four doctors and 40 assistants. The equipment is that of a hospital, so that both surgical and medical cases can be dealt with, and the journey be continued for days without injury or inconvenience to the patients. Besides these the Army Medical Department have trains which are convertible for use for the transport of the wounded. Each of these consists of 35 covered goods vans furnished with supports and hooks to take either two or three tiers of stretchers, making accommodation available for either 280 or 420 wounded. Each train has a captain of the Army Medical Corps, three lieutenants, and 40 orderlies. Four of these trains are at the disposal of each army.

The Effect of Alcohol upon the Mental Processes of Young People.

L'Igiene della Scuola refers to some interesting experiments which Signorina Sertoli, a schoolmistress, has carried out upon the influence of small quantities of alcohol on the mental processes of young people. Her subjects were a girl aged 10 and two boys aged 14 and 16 years respectively. Their normal capacity as regards attention and memory was first determined and the experiments were made two months later. Half an hour before examining a small quantity of marsala, containing 14 per cent. of alcohol, was administered, the amount varying with the age of the subject, and increasing slightly in successive experiments. The conclusions arrived at were: 1. Alcohol in small quantities produces a psychical excitation which rapidly reaches its maximum and slowly declines. 2. A slight alcoholic excitation renders the process of attention quicker, more intense, and more oscillating. 3. As regards memory, it makes the process of fixation more rapid and clear, but the conservation of the memory-contents is less resistant. At the same time, it is a transitory cause of the rise of subconscious memories to the level of consciousness. 4. Alcohol causes the lowering or disappearance of certain moral sentiments, especially those which tend to restrain human activities. This effect varies with the temperament of the subject, being greatest in the emotional and least in the phlegmatic.

Nov. 14th.

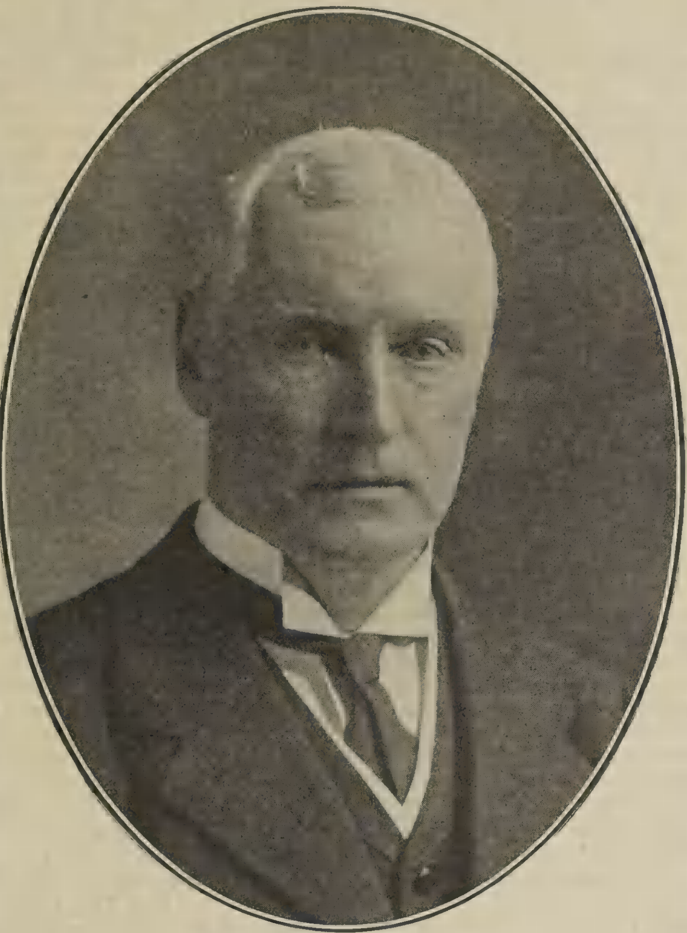
THE BENGAL MEDICAL COUNCIL.—The constitution of the Bengal Council of Medical Registration is now complete, and the following medical men have been appointed members:—Surgeon-General F. A. Harris, C.S.I., M.D., I.M.S., Surgeon-General with the Government of Bengal (President); Lieutenant-Colonel W. J. Buchanan, C.I.E., M.D., I.M.S., Inspector-General of Prisons, Bengal; Lieutenant-Colonel F. O'Kinealy, I.M.S., surgeon superintendent, Presidency General Hospital; Lieutenant-Colonel E. A. R. Newman, M.D., I.M.S.; Lieutenant-Colonel J. T. Calvert, M.B., I.M.S., Principal and Professor of Medicine, Medical College, Calcutta; Lieutenant-Colonel C. R. Stevens, F.R.C.S., I.M.S., professor of clinical and operative surgery, Medical College, Calcutta, and Surgeon to the College Hospital; Major D. McCay, M.D., I.M.S., professor of physiology, Medical College, Calcutta; Rai Upendra Nath Brahmachari Bahadur, M.D., teacher of medicine, Campbell Medical School, Calcutta; Lieutenant-Colonel A. E. Harold Brown, M.D. Durh., M.R.C.P., I.M.S. (retired); with Dr. S. P. Sarbadikari, Babu Hari Dhan Dutt, L.M. & S., Dr. Kedar Nath Das, L.M. & S., Dr. Sarat K. Mullick, and Rai Sahib Giris Chandra Bagchi.

Obituary.

CHARLES BARRETT LOCKWOOD, F.R.C.S. ENG.,

CONSULTING SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

Mr. C. B. Lockwood, the distinguished surgeon and anatomist, whose death took place on Nov. 8th at his residence, 19, Upper Berkeley-street, W., was the third son of the late George Lockwood. He was born at Stockton-on-Tees on Sept. 23rd, 1856, and was educated at Bramham School and St. Bartholomew's Hospital. He qualified M.R.C.S. Eng. in 1878, and obtained the Fellowship three years later. In 1882 he was appointed demonstrator of anatomy in the medical school of St. Bartholomew's Hospital, and held this post until 1892, when he was appointed assistant surgeon to the hospital. He was promoted to be full surgeon at the end of 1903, filling the vacancy caused by the death of Mr. W. J. Walsham, and retired from the active service of the hospital in 1912, when he was elected consulting surgeon. Mr. Lockwood's ten years' work in the anatomical department formed an important epoch in his career. He soon built up a high reputation both by his researches in anatomy and by his general teaching capabilities. At this period, though he was always rather reticent on the subject, it would appear that his life was by no means an easy one. One of his oldest friends writes, "I have seen his career from the struggling demonstrator of anatomy days to the zenith of his fame," and from this and private information it is clear that the fight for supremacy was very strenuous. In this he was not alone. Sir Henry Butlin, one of his greatest friends, passed through a similar ordeal. Both emerged from the fight with conspicuous success.



CHARLES BARRETT LOCKWOOD.

(From a photograph by Messrs. Elliott and Fry, Limited.)

In addition to his duties at St. Bartholomew's Hospital Mr. Lockwood was for some years surgeon to the Great Northern Central Hospital and consulting surgeon to the Royal General Dispensary. In 1887, 1888, and 1889, and again in 1895 he was a Hunterian professor at the Royal College of Surgeons of England, while in 1908 he was elected to the Council of the College and held this office at the time of his death. In 1904 he delivered the Lettsomian lectures before the Medical Society of London on "Aseptic Surgery in Theory and Practice," a subject which he had made peculiarly his own. Mr. Lockwood also had the distinction of having served as president of the Anatomical Society, of the Medical Society of London, and of the Harveian Society of London. A colleague sends the following intimate appreciation of Mr. Lockwood's work and character :—

"The unexpected and early death of a great surgeon must invariably come as a severe blow to those who have worked with him, more especially when the attendant circumstances are of so tragic a nature as in this case. Here is a surgeon who had spent many years of his life in combating sepsis, who had devoted his talents to the elucidation of the precepts of aseptic surgery, and who had taught on this subject to the whole world; here is such a man finally falling a victim to those very organisms against whose action he had fought so strenuous and so successful a fight. And yet the manner of his death was typical of the way in which he never spared himself when the life of a patient was at stake. Early in October he was operating on a patient for appendicular peritonitis, a disease on which Lockwood had written so insistently and thoroughly. The condition of the patient was grave and great speed of execution was demanded, and he pricked his finger when inserting almost the last stitch. He was taken ill the same night, and died five weeks later from septicæmia.

When I entered St. Bartholomew's in 1894 Willett, Butlin, and Lockwood were the three surgeons who impressed me most—Willett by reason of his ruggedness, strength of character, and honesty of purpose; Butlin on account of his teaching and interesting personality; Lockwood through his wit and his striking surgical technique. How little I thought that I should subsequently act as his assistant surgeon for many years and attend him on his deathbed. In the wards of the hospital he was beloved by his house surgeons and by his dressers. The patients seemed instinctively to know that they had a great man to deal with. His powers of observation were so keen that no malingerer ever escaped undetected. No point in the history of the case was considered too trivial, and no clinical fact was eliminated except after the most careful scientific and pathological investigation. During the nine years that he occupied the post of surgeon to the hospital three assistant surgeons served under him, each of whom considered that no task was too great if set by him.

Lockwood always expressed himself in few words, concise and dogmatic. He loved nothing better in the evenings, after the day's work was done, than that one of his friends or colleagues should drop in for a chat on surgery or fishing. When visited unexpectedly he was always to be found at work, engaged at his correspondence, writing up his cases—every case that he operated on, whether in hospital or in private, whether serious or trivial, was fully noted. Then, again, he was a serious author, his writings on 'Aseptic Surgery,' 'Hernia and Varicocele,' 'Appendicitis,' 'Carcinoma of the Breast,' &c., being accepted as standard works throughout the surgical world. During the last few weeks of his life he was fully occupied in working up the surgery of 'Movable Kidney'—delighted at being engaged in some new methods of treatment. He was always enthusiastic on his subject and always dogmatic, totally regardless of opposition, confident in his theories and practice. Of his writings, however, I have always thought that his 'Clinical Lectures' were most typical of the man—examples of his great powers of observation and attention to clinical details. He often used to tell me that he rather dreaded giving a clinical lecture. He was more nervous when talking than when carrying out the most serious operation, and it cannot be denied that his house surgeons and dressers occasionally experienced difficult afternoons. He suffered from neuritis, and certain exacerbations of this trouble led to some irritability of temper. At such periods his wit, usually humorous, became caustic. The nursing staff also suffered on these occasions, but he often said to me, 'Yes, I know they hate me, but they always come to me when they want advice and treatment.' No one could hate him in reality; such sentiments were impossible, but he was sometimes feared by those who did not know him and who did not fully appreciate his kindness of heart. To those who knew him well he was always lovable, though such a word barely expresses one's real sentiments; he was too notable a character — veneration more accurately defines one's feelings.

All his cynical traits, however, were abolished after his marriage seven years ago, and he had three children whom he adored. He remained as keen on his work, as unsparing of himself and as great a teacher, but the strain of hospital routine began to exercise some effect upon him and he retired from active hospital practice two years ago. He meditated leading a quieter life, took a house in the West of England, and there spent as much time as his private practice allowed."

Mr. Lockwood was buried at Instow, on the North Devon coast, on Nov. 12th, in the presence of a large gathering of friends. Earlier in the week a memorial service was held at the Church of St. Bartholomew the Less, close to the wards and theatres in which he had worked. He will long be remembered as a great clinical teacher and a great personality.

Correspondence.

"Audi alteram partem."

IN AID OF OUR BELGIAN COLLEAGUES.

To the Editor of THE LANCET.

SIR,—The committee whose formation has already been announced in your columns is desirous of starting an immediate attempt to help the Belgian medical practitioners and pharmacists whose plight is so movingly represented by Professor Jacobs, as the delegate from a Belgian committee having similar aims.

The committee has made all preliminary inquiries, and has come to the conclusion that the most practical step which it can take at once is the despatch to Belgium in portable form of packets of medical and pharmaceutical material. These packets will be made up by Messrs. Burroughs Wellcome and Co. in accordance with an approved list, and will be conveyed to Belgium upon advice received from the American Ambassador and Mr. L. Hoover, the Belgian Minister, the manager of Messrs. Harrods, Limited, and Major Gordon, who has already done such good work as a medium for practical assistance between this country and Belgium.

The committee has already received promises of a certain number of subscriptions which justify it in making an experimental consignment, but it appeals to the medical and pharmaceutical professions in this country for funds to enable the Belgian medical practitioners and pharmacists to carry on their work effectually so soon as military and political circumstances permit.

We appeal also for surgical instruments; many of these, though not of the latest pattern, will be extremely valuable. The following are especially required: scissors, dressing and artery forceps, scalpels, syringes, and midwifery forceps. The instruments should be sent at once to the Master of the Apothecaries Society, Apothecaries Hall, Blackfriars, London, E.C., and any small adjustments required in them will be made.

Further, we want money to help the refugee Belgian doctors and pharmacists in this country, most of whom have nothing in this world left to them.

The intention is that the work of the committee shall develop, as the conditions of Belgium permit, and that the work shall be associated with corresponding efforts in Great Britain and Ireland, in the United States and other countries which are neutrals or allies in the war.

Subscriptions should be sent to the honorary treasurer, Dr. H. A. Des Vœux, 14, Buckingham-gate, London, S.W., and cheques should be crossed Lloyds Bank, Limited.—We are, Sir, yours faithfully,

RICKMAN J. GODLEE (*Chairman*).

THOMAS BARLOW,
President of the Royal College of Physicians of London.

W. WATSON CHEYNE,
President of the Royal College of Surgeons of England.

MEREDITH TOWNSEND,
Master of the Apothecaries Society.

W. J. WOOLCOCK,
Secretary and Registrar of the Pharmaceutical Society.

H. A. DES VŒUX (*Honorary Treasurer*).

DAWSON WILLIAMS,
Editor of the "British Medical Journal."

S. SQUIRE SPRIGGE,
Editor of "The Lancet" (*Honorary Secretary*).

Nov. 18th, 1914.

THE MEDICAL PROFESSION AND RECRUITING.

To the Editor of THE LANCET.

SIR,—I venture, with your kind permission, to draw attention to one way in which our general hospitals could render assistance at the present crisis in the vitally important matter of recruiting.

At the Leicester Royal Infirmary we have recently set aside a ward of 12 beds for the radical cure of hernia, varicose veins, varicocele, hammer-toe, and other physical disabilities removable by operation responsible under present conditions for the rejection of quite a number of keen and otherwise eligible recruits. Such patients only require, individually, a short stay in hospital, and as they have all expressed their intention to reapply for enlistment on recovery, a considerable addition will be made locally to one or other branch of the service. If this were done in a systematic way in the hospitals throughout the country I think a considerable result would be achieved.

May I also take this opportunity of respectfully suggesting that some definite instruction should be given from headquarters to medical officers examining recruits not to reject on account of varicocele (except in extreme form) otherwise eligible candidates? The different practice among different medical officers leads at present to inconsistency and individual disappointment, and prevents a considerable number of healthy and active men from entering the army. It seems a pity to disqualify, on the score of varicocele, a young man leading the active, laborious life of a farm labourer who, until he applies, is unconscious of any disability.

I am, Sir, yours faithfully,

C. J. BOND,

Vice-Chairman and Hon. Consulting Surgeon to the Leicester Royal Infirmary.

Leicester, Nov. 15th, 1914.

WESSEX DIVISION OF TERRITORIAL FORCE: APPEAL FOR MEDICAL OFFICERS.

To the Editor of THE LANCET.

SIR,—I beg to apply for the courtesy of your columns to make an appeal to the younger medical men in the six counties of Devon, Cornwall, Somerset, Dorset, Hants, and Wilts for candidates for the medical services of the Territorial Forces of these counties.

As is probably well known, the Territorial Force throughout the country has, by Lord Kitchener's orders, been duplicated, a reserve regiment or corps being formed in each instance to take the place of the original unit, now known as the General Service Unit. This necessarily entails a doubling of the medical officers throughout the Wessex Division. We require at present at least 31 medical officers to complete the establishments of the cavalry field ambulances, divisional field ambulances, and the various regimental units of yeomanry, artillery, engineers, infantry, and Army Service Corps.

The absolute need of an efficient medical service to maintain the health, control the sanitation, and in the event of battle succour the wounded of the troops need not be enlarged on here. Without an efficient medical service the best troops speedily lose their fighting value.

I am well aware of the severe strain which is now being thrown on our profession in coping in diminished numbers with the legitimate requirements of the civil population. But in the struggle in which the nation is engaged the needs of the army, both Regular and Territorial, are paramount, and I appeal therefore with confidence for more medical recruits. The chances of active service in connexion with these commissions are at least as good as in the case of the new army. The three General Service Wessex Field Ambulances have already been for some time at the front serving with the 8th Regular Division, and were indeed among the first Territorial troops to go there.

To save unnecessary correspondence I may state here that candidates for these commissions should be of sound health and active habits, and that in the case of field ambulances, and all except infantry units, they should be able to ride. Gentlemen who have previous service will, as far as possible, be gazetted to the rank they held on resignation. The ages at which commissions can be granted have been fixed by the War Office as under: Lieutenants should not exceed 40 years; captains, 45 years; majors, 50 years; and lieutenant-colonels, 57 years.

Candidates from the young and active members of the profession are particularly called for. I shall be glad to give any further information required.

I am, Sir, yours faithfully,

H. MACKAY,

Colonel, Army Medical Service.

Headquarters, Wessex Division T.F., Exeter, Nov. 16th, 1914.

LONG AND ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—In my brief note in THE LANCET of Oct. 31st I was not discussing the history of anæsthesia but referring only to Sir James Y. Simpson's relation to the subject. Long's claims are an old story, which anyone may read at length in Dr. Hugh Young's article in the Johns Hopkins Hospital Bulletin, Vol. VIII., p. 174. Everyone will, I think, agree with the following judgment of Professor Welch:—

"The honour of making the first trial of anæsthetic inhalation in surgical operations belongs to Dr. Crawford W. Long, a respected and honorable country doctor, then living in Jefferson, Jackson County, Ga., who, in March, 1842, removed painlessly a small tumour from the neck of James M. Venable, anæsthetised by ether. He seems to have performed at least eight minor surgical operations during the next four years upon patients under the influence of ether. Dr. Long is necessarily deprived of the larger honour which would have been his due had he not delayed publication of his experiments with ether until several years after the universal acceptance of surgical anæsthesia. It is also to be regretted that his published details of the mode of administering the ether and the depth of the anæsthesia are so meagre and unsatisfactory. While the accepted rule that scientific discovery dates from publication is a wise one, we need not in this instance withhold from Dr. Long the credit of independent and prior experiment and discovery, but we cannot assign to him any influence upon the historical development of our knowledge of surgical anæsthesia or any share in the introduction to the world at large of the blessings of this matchless discovery."

Surgical anæsthesia as a practical procedure dates from Oct. 16th, 1846, when William Morton, in the Massachusetts General Hospital, Boston, gave ether to Gilbert Abbott, upon whom Dr. John Collins Warren performed a painless operation.

I am, Sir, yours faithfully,
Oxford, Nov. 16th, 1914. WILLIAM OSLER.

INTRATRACHEAL ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—In relation to Dr. R. L. Jones's account of my cases of intratracheal anæsthesia in THE LANCET of Nov. 7th, there is one point which perhaps requires a further note. In one case of excision of the tongue the patient died from pneumonia, and this would seem to show that this method of anæsthesia is therefore no safeguard against this complication. But it ought to be pointed out that the mouth was very foul owing to the fact that the ulcerating growth had extended far back. The whole tongue was removed, so that the epiglottis stood up at the back of the floor of the mouth. I never saw a case in which post-operative shock was less marked, and the patient was sitting up reading the paper the day after operation. Nevertheless, he died a week later from septic pneumonia. I believe that this is accounted for by post-operative infection and not by inhalation of blood during the operation.

I am, Sir, yours faithfully,
ERNEST W. HEY GROVES.
Richmond Hill, Clifton, Bristol, Nov. 10th, 1914.

THE WILLIAM LANGLEY MEMORIAL FUND.

To the Editor of THE LANCET.

SIR,—A year ago you were good enough to announce that my bankers (Sir Charles R. McGrigor and Co.) would receive subscriptions from members of the West African medical staff to the above fund. I now beg to state that the sum of £47 5*s.* 9*d.* was thus collected and has been transferred, with a list of subscribers, to the Bank of British West Africa, Leadenhall-street, E.C., for the credit of the main fund, which is under the control of the committee at Lagos, Nigeria.

I understand the fund will be disposed of as follows: First, a brass tablet in the colonial church at Lagos in memory of Mr. Langley. Second, a yearly gold medal to be competed for at the schools of tropical medicine.

I am, Sir, yours faithfully,
J. P. FAGAN,
Kensington, W., Nov. 15th, 1914. (Late P.M.O., N. Nigeria.

ROYAL DENTAL HOSPITAL OF LONDON SCHOOL OF DENTAL SURGERY.—The prizes were distributed to the successful students on Nov. 17th by Mr. Arthur Hood, chairman of the committee of management.

THE LADY DUFFERIN FUND.—Sir Harcourt Butler presided at a meeting of the central committee of the Dufferin Fund, at Gorton Castle, Simla, on Oct. 13th. The following were present: Sir Reginald Craddock, Sir Pardey Lukis, Raja Sir Harnam Singh, Sir James Roberts, Dr. K. A. Platt (of the Women's Medical Service for India), and Mr. G. A. Hanrahan, officiating joint secretary. The central committee of the Dufferin Fund has taken over the control of the regular service of qualified medical women recently sanctioned by the Government of India. The service is now at full strength and its members are all appointed to important centres throughout India and Burma.

THE POSITION OF BELGIAN DOCTORS AND PHARMACISTS.

By PROFESSOR C. JACOBS,
OF THE UNIVERSITY OF BRUSSELS.

BELGIUM, a blood-stained and ruined country in the horrors of despair, claims the help of her friends to whom her freely consented sacrifice has brought a ray of hope in the dreadful nightmare of the past three and a half months.

I raise my voice with a feeling of intense pity on behalf of thousands of our weeping brethren in their Calvary of suffering, but it is my pride to carry out this duty to my country. The first impulse of the Belgian medical world is to make an appeal to Great Britain, whose kindness has proved itself in such unbounded measure and with such tact and generosity. The German iron fist has closed upon our country; we have to witness the endless series of crimes that are committed in all our provinces, and we have to abide in silence. All the evils of war have been thrust upon us at the same time—a useless and cruel holocaust of human lives, a decimated, despairing, and starving population, ruined homes, and, far worse than all, our children, the only hope of our country, are being mown down by want and disease.

Our doctors have not been spared; they, too, are bearing a heavy share of the general suffering, And now long weeks, nay months, of trial stand before them, during which they know that they will have to bear a terrible burden. They will have to devote themselves untiringly, giving all their care and time, and even their lives, if need be, to the cause of their country; and yet many of them, victims of a barbarian foe, are homeless, deprived of their laboratories, instruments, and their medical stores. What will become of those that still remain of our people, threatened as they are by the grim havoc of war and by contagious disease, its constant follower?

In anticipation of these inevitable consequences it has become my duty, as the spokesman of my Belgian colleagues, to appeal to the medical and pharmaceutical world that an impulse of international fraternity may come to the aid of Belgian doctors and pharmacists. Is it realised what we in Belgium have suffered and are suffering? Duty, and duty only, has bound our doctors and pharmacists to their posts in the devastated localities; some of them are carrying on their profession in the ruined remains of destroyed buildings, whereas others have to improvise at haphazard any kind of shelter for their Samaritan work. Need I describe the manner in which they sustain themselves and how they manage to nourish their wives and children?

I have witnessed such misery amongst them! Some have had to work as navvies in order to have a few pence in their pockets; others have told me that they had not seen bread for a fortnight, but had lived exclusively on potatoes. Others had a meagre bunch of straw laid on the bare ground as a bedstead; the only pair of boots owned by one of them was falling to pieces in tatters. Men I have seen were dressed in torn garments and their children were in rags. One of my colleagues had to live on wayside herbs for three days and three nights and his wife shared his fate! A professor of a university, bereft of everything, was, when I saw him, in dire want of a bed, and another of equal academic standard was wandering haggard over the countryside, searching in vain for a beloved family. And some of our ranks have been taken as hostages, others have been shot, and their widows and orphans have been left deprived of everything.

This description presents a genuine picture of the distress of the Belgian medical profession, but when these educated people are struck down by want they will never beg for charity: it must be brought to them. It is impossible to calculate how many of them are in this sore distress, and some have been so for days and weeks, but it is easy to see that the distress must be very widespread. Considering now the medical men only, Belgium contained 4800 doctors; the number of localities that have been destroyed is roughly as follows:—

Province of Brabant.—Londerzeel, Merchtem, Capelle-au-bois, Kotselaar, Wildouck, Cortenberg, Gelroode, Nieuwenrode, Wavre, Eppeghem, Beyghem, Ottignies, Mousty, Louvain, Jodoigne, Linsemaux.

Province of Limbourg.—Haelen, Lanacken, Tongres (partly).

Province of Liége.—Liége (partly), Mouland, Bermont, Visé, Micheroux, Batisse, Herve, Hermée, Milmont, Flemalle, Francarchamps, Lincent, Huy, Seilles.

Province of Namur.—Namur (partly), Bierwart, Narille, Tamines, Faliseulle, Andenne, Spontin, Evrehailles, Houx, Yvoir, Dinant, Bovinure, Anhage, Hartiere, Sommière, Walcourt, Mariembourg, Dourbes.

Province of Hainaut.—Charleroi (partly), Montignies, Morlanwelz, Gouy-les-Piéton, Lobbes, Beaumont, Frameries (partly), Merbes, Jemappes, Quaregnon, Marchienne.

Province of Luxembourg.—Rossignol, Etalle, Ethe, Florenville, Virtey, Arlon, Neufchateau, St. Hubert, Anthee, Arsimont, Marche, &c.

The deserted province of Antwerp and both the provinces of Flanders have been battlefields since one month, with the great struggle raging round Dixmude, Nieuport, Courtrai, Middelkerke, Ostende. What remains of those places to-day?

Each of those localities has its doctors and pharmacists, and at least 1000 of the doctors are now absolutely poverty-stricken, and 2000 to 3500 doctors are suffering cruelly through this war. We had 1800 pharmacists all over the country, and at least 300 of them are unable to earn their living, and all of them, with very few exceptions, are deprived of the most necessary trading stock. I dare say that my estimate is below reality.

Consider the immense suffering that our medical brethren have gone through and are still going through. Their pathetic and lamentable distress should unite all in the desire to relieve it. These practitioners have given a lesson to the world of unfaltering energy, but now their breaking courage will have to be kept up. In this emergency I call on the medical profession of England to rally to our help. It will be for us a great debt of honour and of eternal gratitude.

THE WAR.

THE CASUALTY LIST.

THE following casualties among officers in the Royal Army Medical Corps and Indian Medical Service serving with the Expeditionary Force have been reported since our last issue:—

Killed: Captain Ernest Mure Glanvill, R.A.M.C.; Captain Angus McNab, R.A.M.C. (T.).

Died of Wounds: Captain Thomas McCann Phillips, R.A.M.C.; Captain Charles Paget O'Brien-Butler, R.A.M.C.; and Lieutenant M. Richardson, R.A.M.C.

Wounded: Major F. S. Irvine, R.A.M.C.; Captain H. S. Dickson, R.A.M.C.; Captain A. E. Grisewood, I.M.S.; Captain W. F. M. Loughnan, R.A.M.C.; Captain K. Comyn, R.A.M.C.; and Lieutenant L. R. Shore, R.A.M.C.

Wounded and Missing: Captain A. M. Rose, R.A.M.C.

Missing: Lieutenant J. G. Butt, R.A.M.C.; Lieutenant N. M. Mehta, I.M.S.; and Lieutenant H. G. Winter, R.A.M.C.

Captain C. W. Holden, R.A.M.C., and Captain A. A. Meaden, R.A.M.C., previously reported wounded and missing; Captain R. V. Dolbey, R.A.M.C., and Captain R. A. Flood, R.A.M.C., previously reported missing; and Captain W. P. Croker, R.A.M.C., are now unofficially reported prisoners of war.

CAPTAIN H. S. RANKEN, V.C.

In the first list of nine officers and non-commissioned officers to whom the Victoria Cross has been granted for conspicuous bravery while serving with the Expeditionary Force appears the name of Captain Harry Sherwood Ranken, R.A.M.C., who died at Braisne on Sept. 25th from wounds received in action. Captain Ranken, whose obituary notice appeared in our issue of Oct. 24th, was awarded the Victoria Cross "for tending wounded in the trenches under rifle and shrapnel fire at Hautvesnes on Sept. 19th, and on Sept. 20th continuing to attend to wounded after his thigh and leg had been shattered."

THE SURGERY OF THE WAR FROM THE FRENCH STANDPOINT.

We have published many articles from the pens of British surgeons on their experiences of the war. The views of an eminent French surgeon will therefore be of all the more interest. At the Académie de Médecine of Paris M. Tuffier, who had been sent by the Minister of War to inspect the arrangements for the treatment of the wounded of our gallant Allies from the fighting line in the Vosges to the base hospitals, has given his conclusions. He considers the superiority of antiseptic over aseptic treatment incontestable and the drainage of infected wounds a procedure which nothing equals. The conservation of wounded limbs, a practice defended by the French school against amputation recommended by the Germans, is adopted in all the hospitals, but discrimination is necessary because of the dangers of emphysematous gangrene and septicæmia. M. Tuffier finds that in general the gravity of wounds increases progressively according as they are due to rifle bullets, shrapnel, or shell fragments. The gravity of the wounds produced by the last and the dangers of gangrenous septicæmia and tetanus make him regard immediate extraction of the fragment as indicated when this can be easily done. Compound fractures of limbs, other things being equal, are graver the nearer they are to the trunk, especially in the femur. Bullet wounds of the chest which come under treatment in hospitals have proved remarkably benign; cases of hæmothorax necessitating operation are exceptional. M. Tuffier was shown cases of large apertures of exit of projectiles as evidence of the use of explosive bullets. This charge is constantly being made by all the armies engaged in the war and has been discussed in our columns. It has been levelled against the Allies by the German press. M. Tuffier gives the explanation of many injuries attributed to the use of explosive bullets. The terrible wounds are due, he says, to the bursting on a bone of the hard envelope of an ordinary bullet or to the carrying away of a piece of bone—an explanation with which all experts are agreed. The use of a bullet prohibited by the rules of warfare can be proved only by the finding of such in the possession of a soldier. On the field of battle French "first aid" consists in the "parsimonious" application of tincture of iodine to the wound, an aseptic compress, a little cotton-wool, and a bandage. These are often alone sufficient in the case of simple wounds to ensure healing. In the field hospitals are retained the cases too serious to be sent to the base hospitals—wounds of the abdomen and chest, fractures of the upper third of the femur, and cases of hæmorrhage. M. Tuffier insists that in these hospitals there should be skilful surgeons capable of rapidly seizing the opportunity of performing any operations which may be necessary and which the organisation and equipment permit. But he does not think that laparotomy and suture of the intestine for abdominal wounds can be performed with any chances of success in a place where operations are being performed on septic cases, and where time is wanting. However, if percussion shows a large intra-abdominal effusion—a frequent condition—suprapubic incision under local anæsthesia and drainage may be performed. The usual treatment of abdominal wounds is to place the patient in the sitting posture, for him to abstain from all food, and to maintain these conditions until arrival at a completely equipped hospital. The treatment of tetanus—a frequent complication from contamination of wounds by the soil—should, M. Tuffier says, be preventive. The surgeon should endeavour to destroy on the first dressing any germs which may have gained access to the wound and should inject antitetanic serum as soon as possible. The urgency of the latter measure is shown by the case of an officer wounded in the battle of the Aisne by a fragment of shell which tore away all the metacarpal bones. Although he was injected on the second day after the injury, symptoms of tetanus appeared five days later and he succumbed. The most frequent grave complications are infections of fractures and wounds of joints, particularly of fractures of the upper third of the femur. In such injuries removal of projectiles and pieces of garment carried in by them and of free bone splinters and drainage should be carried out. The most serious complication is emphysematous gangrene, which should be treated at its onset by the actual cautery and injections of hydrogen peroxide.

MEDICAL PREPARATIONS FOR WAR IN THE OVERSEAS DOMINIONS.

At such a time as this the medical man is peculiarly fortunate. Little or no military training is necessary for his conversion into a serviceable member of His Majesty's army. It is therefore not surprising to find that the medical men of Britain beyond the seas are displaying in their own particular way that enthusiasm to serve which is one of the most remarkable features of this world-wide crisis. The Canadian medical journals are full of evidence of this spirit. Name after name is given of medical men who have volunteered for service. Not the least remarkable of these is that of Dr. J. G. Adami, professor of pathology in the McGill University, who has volunteered for service as a private. From the *South African Medical Record* of Oct. 10th we learn that the practitioners of the Orange Free State and Basutoland have made arrangements for working the practices of those called up by the mobilisation orders, so that they may suffer a minimum of loss. This journal comments favourably upon this step, and advocates its adoption throughout the Union. In a leading article entitled "Volunteer!" the *Medical Journal of Australia* details the steps already taken to provide the next Australian Expeditionary Force with a medical service. Behind the regimental medical officers with stretcher-bearers in the firing line there are light horse field ambulance wagons—an Australian device. Behind these, again, are the field and base hospitals. The personnel needed to man this organisation must include 92 medical officers. To this number must be added 60 medical men who have already volunteered for service with the first Expeditionary Force, and approximately 100 needed for the navy and for the Army Medical Reserve Corps on duty in Australia. The total number of medical men will therefore be about 250, actually about 10 per cent. of the whole Australian profession. This is a very remarkable figure, and one of which our Australian colleagues may indeed be proud. But the editor of the journal is not quite satisfied with it. He urges upon all those who are not serving their Empire in this direct manner the need for caring for those patients at home whose medical men have gone to war.

A VISIT TO CALAIS AND DUNKIRK.[1]

Our Special Sanitary Commissioner, who has been detailed for official work overseas, sends us the following account of a visit to Calais and Dunkirk:—

Calais, Nov. 11th.

No continental landing stage is better known throughout the world than the Gare Maritime at Calais. Whether the traveller from England is bound to Paris or Petrograd, the Italian lakes or the Black Sea, Egypt or India, he will in all probability land at Calais. But what a changed Calais it is in which I find myself to-day. There is no Dover boat, and no travellers for business or pleasure; there are no tourists. There is but one solitary passenger boat, which arrives late in the evening, and comes from Folkestone, not from Dover, and the vast majority of those on board are not passengers in the usual sense of the term. They are Belgian soldiers who have recovered from their wounds, or Belgian conscripts or volunteers, one and all going to join their regiments. The few English or other passengers, the rare travellers who have actually paid for their fare, are connected with the Red Cross, or, in any case, are going over for some grim war purpose. The polite stewards and helpful sailors, always anxious to render some small service in anticipation of a disproportionately large gratuity, have disappeared, as also the smartness and tidiness of the ship. Soldiers are lying on the decks, playing cards, smoking everywhere. The scene is more like a rough bivouac than a luxurious Channel passenger steamer. Nor did we get aboard the ship in the old easy way. In the train from London a yellow card has to be filled up stating where the traveller is going and why he is going there. On leaving the train at Folkestone he presents this card, which is kept by the authorities, while he shows his passport. This document, with proper *visé*, has to be shown again, and perhaps several times, before he can go on board, and, of course, before he is allowed to land at Calais.

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[1] This article has been submitted to the Press Bureau, which does not object to its publication, as censored, and takes no responsibility for its correctness.

Military Occupation of the Calais Landing Stage.

Only dim lights are to be seen on the once brilliantly illuminated Calais landing stage. On entering the station building, instead of ticket collectors, we found Red Cross nurses, wearing their aprons, a white cloth to cover their hair, and in every other way ready to dress wounds and give help to the sick or wounded. And any number of Belgian soldiers crowded the station. The French Custom House officials had nearly all gone to the front; no one took the trouble to inquire about or look into my handbag. On the other side of the station the lines looked blank and deserted. There was not a train to be seen anywhere, and there was neither a carriage nor even a hand truck in which to wheel luggage along. Such commodities were, I was assured, superfluous, as there was not a bed to be had in the town, so it was no use going to inquire about one. To judge by the condition of the hotel adjoining the Maritime Station the report seemed true, while the station was full to overflowing, and every box, case, hamper, or bale of goods was being used as a seat, and every corner where it was possible to squat on the ground was already occupied by weary Belgian soldiers. The position was awkward, as I was accompanying a lady doctor and nurse, and felt responsible for their well-being. Fortunately a Belgian officer remembered having met me at an international congress, and as soon as I had someone in authority to intercede in our favour I felt reassured. In the end we were allowed to grope our way through the darkness back on board the ship we had travelled in. There were no beds but small state cabins where we slept on hard couches.

Calais as an "Evacuated" Town.

The next morning an eminent Belgian surgeon came to our rescue and conveyed us to the town in his ambulance motor. The doctor was under orders to proceed to another part of France, the nurse was then and there taken to a new hospital in course of formation, and I found an hotel where they allowed me to occupy for one night the room of an officer who was at the front. As for the following night, that would depend if some other room became vacant and if I succeeded in obtaining permission to remain in Calais, for I was in this unenviable position that I could not stop more than 24 hours without a permit, nor could I leave the town without a permit. My passport was no use in itself, but only of use in getting the necessary documents.

Calais, like Dunkirk, is legally speaking an "evacuated town," yet it contains such a crowd that it is almost impossible to find a bed, and at the hotels people are sleeping on sofas, on the floor, or on billiard tables. The fact is that while the presence of ordinary travellers is not allowed there are any amount of soldiers and of Belgian refugees. Indeed, the majority of the population of Calais consists of Belgian soldiers and Belgian fugitives. The famous city has been made over to the Belgians as Boulogne has been selected for the English. Belgian gendarmes, fully armed, pace the streets in couples, instead of the ordinary French police. If asked the way, they reply they are strangers and have no knowledge of the town. If after trying the public authority in vain I applied to an ordinary civilian the result was likely to be the same. He also generally proved to be a stranger, a Belgian just escaped from the devastation of his own country. Under these circumstances I did not find my way easily to the hospitals and the medical men whom I wanted to see.

Great delay, combined with a considerable amount of physical discomfort, is caused by the obligation to obtain from the Military Governor of Calais a special written permission for nearly every action, but considering the critical military circumstances of the campaign and the knowledge that Calais is the direct object of furious attack, we can wonder at no precautions—all are justified. That the permit to remain in or to go out of the town must be secured on each occasion is reasonable. Every telegram must be written in French and bear the stamp of the military governor before the post will accept it. This means constant visits to headquarters, where there is no waiting-room. Here I permit myself a grumble. The precautions I accept as necessary, but I think that the convenience of the public might be studied a little more. A large and mixed crowd stands in the street till the authorities have sanctioned or refused the request made in writing and which sentinels carry in. It may be necessary to wait for more than an hour, without a seat, exposed to all weathers. Among the crowd there are many women, some with children in their arms and some with infants at their breasts. I could not but think that such exposure if unnecessary was cruel and dangerous. An awning, at least, might be provided or a large tent put up in the yard beyond the entrance, with seats and a stove inside. The perpetual excuse made that "this is war," or in French, "*à la guerre comme à la guerre*," is all very well at a moment of emergency, but several weeks is more than a moment, and there has been plenty of time to show some consideration for the hundreds of people who are daily compelled to stand and wait in the street.

The Transport of the Wounded to England.

As far as possible all the English wounded are sent to Boulogne, though some British wounded have strayed into Calais. The plan is, however, that all the Belgian wounded shall be sent to Calais and thence to England if well enough to travel. At first there is no doubt that some wounded were put on board who were not fit to travel, especially by sea, and a few did not survive the fatigue of the journey. Consequently efforts were made to increase the hospital accommodation at Calais so as to retain a larger number before exposing them to the risk and fatigue of crossing the Channel, with the chance of adding sea-sickness to all their other sufferings. It is most unfortunate that the new station, now in the course of building on the Admiralty Pier at Dover, is not terminated. But the organisation by which the transport is made works perfectly.

The Enemy at the Door.

Of course, if the Germans captured Dunkirk, Calais, and Boulogne the whole situation with regard to the wounded would be altered at once, and those who not long ago were so fiercely critical of the treatment of the wounded did not recognise what military exigencies demanded. I was struck with the calm confidence of everyone at Calais when the enemy was indeed at the gate. When the Prussian Guards made their notable effort to reach us by attempting to break through the line of defence at Ypres no one appeared nervous. At Dunkirk, which was much nearer and where I proceeded the day after this tremendous onslaught, there was a ghastly accumulation of wounded, but no fear. The aeroplanes dropped bombs and killed women and children in Dunkirk. The German troops had approached a little nearer the day that I was there, for they occupied a part of Dixmude, which is reached from Dunkirk in a motor in less than an hour; but at Dunkirk, as at Calais, the utmost confidence and calm prevailed. We were all far more anxious about the wounded than about the Germans. We felt, and felt keenly, that the best was not being done for the wounded; but our faith in the Belgians, the British, the French, and the Indian soldiers, who were holding the trenches only a few miles away, was absolutely unbounded. Had they given way our lives would have been in the gravest peril. The German shells would have crashed into our hospitals as they have so often done before, and we could not possibly have removed all the wounded in time to save them from an enemy that was barely 20 miles away.

Hospital Requirements at Calais.

To return to the situation at Calais, there are things that need to be said, in my opinion and in the opinion of those whom I consulted on the spot. It is necessary to understand that the hospital base for the Belgian army is in England, and that Calais is only the port of embarkation. Therefore, the wounded are only retained in Calais when the injury they have received is so great that it would be dangerous to send them over to England. Consequently and happily there are not many wounded in Calais, so that there is not a pressing demand for either surgeons or nurses. Indeed, there are many army surgeons in Calais who have little or nothing to do. Highly skilled nurses are more needed, but what is specially required are one or two exceptionally distinguished and experienced surgeons. Surely there need be no trouble about this, if I am right; and whether I am right or wrong could be found out by the briefest inquiry. And if the services of a few additional surgeons of high experience are wanted the need can be met without giving offence to anyone if the right steps are taken. There are desperate surgical cases at Calais that can only be saved by the exercise of high technical skill, and the presence here of one or two consultants not attached to any one particular hospital, but whose help could be secured for the worst cases in all the hospitals, without giving offence to the regular staff of those hospitals, would be of the highest value. It will be easily understood that as most of the cases are shipped off to England, what remains differs altogether from the average practice of field and base hospitals. The susceptibilities of three nationalities have to be considered, I am aware, but I have too good an opinion of them and of our own officials to imagine that questions of pique would arise. It is true that to avoid this Calais has been allotted to the Belgians as Boulogne to the British. Nevertheless, the Union des Dames de France has a French hospital, and the British Red Cross Society has an English hospital both in different parts of the same building in Calais. Also, though there is a vast predominance of Belgian wounded at Calais, it has been impossible to exclude altogether French and British wounded. In the same way the surgeons and the nurses belong to the three nationalities, with a small sprinkling of volunteers from Russia and other countries. It needs some diplomacy to make all these heterogeneous elements work together.

OBITUARY OF THE WAR.

ANGUS MACNAB, M.B., CH.B. EDIN., F.R.C.S. ENG.,

CAPTAIN, LONDON SCOTTISH REGIMENT.

Captain Angus MacNab, who was ophthalmic surgeon to King Edward VII. Hospital, Windsor was killed in the first engagement of the London Scottish Regiment whilst serving in a medical capacity. He was a brother of the Hon. Robert MacNab, formerly Minister of Agriculture in New Zealand. He graduated in arts at Otago, New Zealand, and in medicine at Edinburgh University. Subsequently he devoted himself to ophthalmology and studied at the Moorfields Eye Hospital, where he became a chief clinical assistant, and at Freiburg and Vienna. At the time of his death he was clinical assistant in the ophthalmic department of Charing Cross Hospital. MacNab was a man of great energy and acumen. His facility in learning the German language much impressed Professor Axenfeld when he was working in Freiburg. He translated Axenfeld's "Bacteriology of the Eye"—the standard work on this subject—and Lohmann's "Disturbances of the Visual Functions." He, who so fully proved his appreciation of the benefits of German science, fell a victim to *Kultur* in its most repellent form. A report by a motor-cyclist despatch rider says he "was actually bayoneted in front of their eyes whilst bending down attending to two wounded men. It was bright moonlight, and he had a white badge and Red Cross on his arm and even a blue tunic on, so as to be absolutely unmistakable, and was of course without arms of any sort." It is by such dastardly deeds that we learn that *Kultur*, which once stood for civilisation, now means ultra-barbarism.

CHARLES PAGET O'BRIEN-BUTLER, L.R.C.P. & S. IREL.

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain Paget O'Brien-Butler, who has died of wounds received in action, was the son of the late Major Butler, formerly a racing official in Ireland. O'Brien-Butler received his professional education in Dublin, and took the Licences of the Royal Colleges in 1905. He soon entered the Royal Army Medical Corps. Both before and after qualification O'Brien-Butler was one of the best known amateur riders in Ireland. In 1907 he topped the amateur riders' list. At some meetings he rode every winner of the day. On going to India he became equally famous as a rider. As lately as August 5th in the present year he rode a race at Galway, leaving immediately afterwards for active service. O'Brien-Butler was very popular as a rider; he was plucky and clever, and was recognised as a thoroughgoing sportsman.

THOMAS MCCANN PHILLIPS, M.B. R.U.I.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

News has been received in Belfast of the death of Captain T. McCann Phillips in No. 4 Clearing Hospital, Flanders, from wounds received in action. A son of the Rev. J. G. Phillips, of Damascus, who married a Belfast lady, the late Captain Phillips received his early education in Trent College, Nottingham, and in Campbell College, Belfast. He studied at Queen's College, Belfast, and in 1905 graduated M.B. of the Royal University of Ireland. He was a house surgeon at the Royal Victoria Hospital, Belfast, and shortly afterwards entered the Army Medical Department, gaining first place at the examination. He was home on leave from India when the war broke out, and was posted to Victoria Barracks, Belfast. Although only sent to the front on Oct. 3rd he had seen some desperate fighting, especially round Ypres, being continuously in the firing line during his tragically short service. Captain Phillips was most popular, a good athlete, a man of decided ability, and very kindly and sympathetic. He was unmarried, and great sympathy is felt for his mother, who is a widow, and for his brother, Dr. Walter Phillips, who is a lecturer in the Union Medical College, Moukden.

JAMES HENRY DIGBY WATSON, M.B., CH.B. EDIN.,

TEMPORARY SURGEON, ROYAL NAVY.

J. H. Digby Watson, who lost his life while serving as temporary surgeon in H.M.S. *Hawke* when she was torpedoed on Oct. 15th, was born on August 31st, 1890. He was the son of Engineer-Captain Watson, R.N., and was educated at King's School, Canterbury, Edinburgh Academy, and the University of Edinburgh. At school and college he soon made a name for himself as an all-round athlete, and last winter when he was working at the London Hospital he gained his Rugby International cap for England, playing with great success as a three-quarter against Scotland at Inverleith. He was also a good cricketer, boxer, and high jumper; while in 1912 he won the long jump in the Scottish inter-university sports and in the international athletic contest between Scotland and Ireland. He obtained his medical qualifications at the close of last year, graduating M.B., Ch.B. in the University of Edinburgh on Dec. 17th, and joined the *Hawke* at the beginning of August. His cheerful disposition and independent character, as well as his athletic prowess, endeared him to many friends, and his death at the early age of 24, while in his country's service, is one of the many tragedies of the present war.

The British Red Cross Society.—The summary of the work for the week ending Nov. 17th states that the number of hospitals accepted by the War Office to date is 417, containing beds for 12,749, including 1019 beds accepted during the past week, and distributed among the Army Commands as follows: London, 795; Southern, 3865; Aldershot, 687; Eastern, 3507; Northern, 2034; Western, 1654; Irish, 207. A number of Red Cross Voluntary Aid Detachments are being utilised in connexion with these hospitals. The Weir Hospital, Balham, which has been taken over by the Kensington Division of the British Red Cross Society, has been inspected and approved. Viscountess Ridley's house in Carlton House-terrace, and Evelyn Lady Alington's house, 41, Portland-place, have been inspected with a view to their being converted into hospitals for officers.

At the Netley Red Cross Hospital 300 beds are now available. Three orderlies' huts are nearly completed, and the large dining hall for patients will be ready on Nov. 25th. Her Majesty Queen Alexandra has been graciously pleased to present 400 yards of lawn muslin for puggerees for the wounded Indian soldiers. Messrs. Liberty and Company have also given 420 yards of material for puggerees. There are to-day 153 British and 60 Indian patients in the hospital.

Motor ambulances have been coming in. From noon on Tuesday, the 10th inst., until to-day 50 ambulances and cars and two lorries have been despatched. A falling off has occurred in despatch during the last two or three days of this week owing to the congestion of cars at Folkestone. These could not be shipped over owing to the heavy seas.

Nurses have been posted for duty in Home Military Auxiliary Red Cross Hospitals as follows: Nov. 11th, Sturminster Marshall, 1; Milton Hill Hospital, Abingdon, 1; Nov. 12th, Waverly Abbey, Farnham, 1; Exeter, 1; Nov. 13th, Stourbridge Red Cross Hospital, 3; Nov. 14th, Clandon Park, 1; Beckett Hospital, Barnsley, 2; Louth Hospital, Lincolnshire, 2; Hon. Mrs. R. Lindsey's Officers' Hospital, 2; Southampton Docks Red Cross Hospital, 1; Nov. 16th, Countess of Normanton's, Ringwood, 1; Bighton Wood, Alresford, 1; Frinton-on-Sea Red Cross Hospital, 2; St. John's Hospital, Abbeydale, Sheffield, 1; Nov. 17th, Countess of Normanton's, Ringwood, 1; Brentwood, Essex, 1; making a total of 22.

The following stores have been despatched during the past week: 1002 cases of goods to France, and 271 have been distributed in England, while 90 home hospitals have also been supplied. Medical stores to the value of £3500 have been purchased. The increase on this account has arisen owing to the special consignment sent to the British Red Cross Hospital at Netley. 28,465 garments and pieces of linen have been received, while 39,139 articles have been despatched. The number of gifts of garments and linen shows a great falling off, and it is hoped that a more ready response will be forthcoming with these requisites.

A large number of personal inquiries continue to be received with regard to prisoners of war, but the society has only been able to satisfy a small proportion of these. Daily communication is maintained with Geneva and with Sir Walter Lawrence at the Prisoners of War Bureau.

The society has issued full rolls of Voluntary Aid Detachments mobilised up to Nov. 17th, of British Red Cross detachments employed but not mobilised, and of personnel posted for duty abroad.

The British Medical Association and the Belgian Medical Refugees.—Many communications have been received at the central office of the British Medical Association from members of the medical profession who are anxious to provide hospitality for Belgian medical men and their families at present in this country. The Medical Secretary has offered to the War Refugees Committee at Aldwych the use of the office of the Association as a clearing house, collecting through the *British Medical Journal* the names of medical men wishing to offer hospitality, inquiring as to the nature and extent of the offers made, and transmitting the particulars to the War Refugees Committee. Lord Gladstone has welcomed the coöperation of the Association. Medical men, or the wives of medical men, who are willing to offer hospitality to Belgian medical men and their families are invited to write to the Medical Secretary of the Association stating what hospitality they are prepared to give, and any such offers will be dealt with as promptly as possible. The refugees themselves greatly prefer to be dealt with as families and not as individuals, and this has been adopted as the general policy of the War Refugees Committee.

Military Medical Arrangements in Austria-Hungary.—The American medical profession is not content to stand aside with folded hands watching the wholesale slaughter that is engrossing Europe. It is true that one or two of the medical journals, like some of the lay periodicals of America, are adopting a rather supercilious attitude of virtuous surprise at the madness that has possessed the Old World; presumably these journalists are too young to know anything of the internal struggle that convulsed the United States only 50 years ago. These are, however, in a minority. The general attitude of the American, whether doctor or layman, is one of anxiety to alleviate suffering. Among their many efforts in this direction—efforts which the armies on both sides most gratefully acknowledge—is to be included the despatch of two Red Cross units to Austria-Hungary. These reached Vienna *viâ* Rotterdam on Oct. 14th, one being retained there while the other went on to Budapest. Count Rudolf Traun, who welcomed them on behalf of the Austrian Red Cross Society, said that America was the only neutral country sending medical and surgical help to the European combatants. "A report received from Budapest on Oct. 21st," says the *Boston Medical and Surgical Journal* of Oct. 29th, "states that the American Red Cross unit assigned to that city has been put in charge of a hospital of 180 beds in the Wechselmann Institute for the Blind." It appears, further, from their report that the capital of Hungary is flooded with wounded soldiers who continue to arrive daily in trainloads. (It should be recollected that the battle front in Galicia is about 300 miles distant from Budapest, while the Austro-Serbian line of contact is about 200 miles away.) A new military hospital just opened has 3600 beds, and another barrack hospital has been started which will accommodate 4000 sick or wounded. To meet the immense demand for medical men created by this influx of wounded the Ministry of Education has agreed that students in their fourth and fifth years entering the military hospitals may count the time as a portion of their hospital year. At Trieste and other towns in Southern Austria large numbers of wounded are being received. Convalescent soldiers sent home on furlough are said to be without means of subsistence, so that, in addition to their ordinary pay, the War Office has found it necessary to give a daily sum of 70 kreuzers (about 1*s.* 3*d.*). Italian newspapers state that cholera is rife in Galicia and Hungary, but this happily is unconfirmed as yet.

Accommodation for Wounded Soldiers in Dublin.—The last party of wounded which arrived in Dublin has exhausted the accommodation available in the Dublin hospitals. Moreover, the nature of the wounds is such that the pressure is not likely to be relaxed for some time. Acting on the advice of Surgeon-General Anderson, the City of Dublin Branch of the British Red Cross Society has decided to make the provision of further accommodation for wounded soldiers its first task. It is believed that at least 500 beds will be required in the near future. Several alternative schemes have been under discussion by the committee. It was suggested to erect temporary buildings in some open space such as Phœnix Park; on the other hand, it was suggested to obtain some public building for use as a hospital, or to make the necessary changes in a row of houses; finally, it was suggested that temporary buildings should be erected in connexion with the existing general hospitals. Many of these institutions are possessed of vacant spaces of land adjoining their present buildings, and it should be possible to find space for 500 beds in this way without difficulty. The last-mentioned proposal received most support. It was felt that it solved at once all the questions of management and staff which would arise if a new hospital were erected. A small committee was appointed to get into touch with the hospitals and find what space they had available, and whether they would coöperate in the carrying out of such a scheme.

CARE OF THE WOUNDED IN SCOTLAND.—The arrangements for the distribution in Scotland of the wounded to auxiliary hospitals and convalescent homes, which was under control of the central registry under Major Tudor Craig, have now been discontinued, and the work has been entrusted to the Scottish branch of the British Red Cross Society. The military authorities have also announced that wounded will only be sent to auxiliary hospitals and convalescent homes which have obtained the sanction of the society through its executive, and have been approved on examination by the military authorities. The distribution of cases will be in the hands of the commissioners for the respective districts, and they will decide which institutions are to be ranked as auxiliary hospitals where the grant of 2*s*. per head per day will be given by the military authorities.

Lieutenant-Colonel J. Oldfield, R.A.M.C. (T.), commanding 3rd Reserve East Anglian Field Ambulance, writes from the Drill Hall, Walthamstow, to say that he will be pleased to hear from any medical man who wishes to obtain a commission.

There will be vacancies shortly in Field Ambulances earmarked for foreign service as well as in the Reserve Field Ambulance for home service. There will also be vacancies in combatant units for regimental medical officers. For a man who wishes to go abroad or who wishes to become a regimental medical officer it is always advisable that he should as soon as possible become attached to a field ambulance for training.

WAR GIFT FROM THE MEDICAL MEN OF ESSEX.—The members of the medical profession in the county of Essex have subscribed a sum of over £420, and have purchased therewith a fully equipped motor ambulance with four stretchers, &c., and have presented it to the War Office for use of the wounded in France and Belgium. The subscriptions have been obtained by the various medical officers of health in the county, and a complete list of the donors can be seen at the office of the county medical officer of health in Chelmsford. The ambulance will bear a brass plate, on which will be inscribed: "This Ambulance was Presented to the War Office by the Members of the Medical Profession in Essex, England, November, 1914."

INDIAN GIFTS FOR THE SICK AND WOUNDED.—It is announced that owing to the very generous response of the public from all parts of India a sufficient number of the original ten-bed units of Red Cross gifts for the sick and wounded of the Indian Expeditionary Force has already been received. This does not mean that no more gifts will be needed, but that in future the provision of comforts will be materially modified, and the St. John Ambulance Association is therefore issuing a revised list of all articles it is considered desirable to renew, repeat, or replace. A large supply will be required to replace articles expended at the front. Naturally more gifts will be required for Indian than for British troops, and it is suggested that the proportion of Indian to British should be three to one.

CHOLERA IN AUSTRIA.—According to Austrian official reports published on Nov. 5th and referring to the week from Oct. 21st to Oct. 28th, 645 new cases of cholera were notified in the Austrian empire. These notifications referred to 60 or 70 localities. The following places seemed to form centres for the spread of an epidemic: Vienna, 14; Trappau, 20; Bereska, 23; Taliska, 24; Balygrod, 47; Krems, 105; Rozborg, 82. All the cases notified had occurred among soldiers returning from the battlefields.

A COMMITTEE has been formed in New York, under the auspices of *American Medicine*, for the collection of a fund for the relief of doctors in Belgium. The committee includes the names of Dr. W. S. Bainbridge, Dr. S. Ely Jelliffe, Dr. W. H. Porter, Dr. Parker Syms (of New York), and Dr. Charles E. de M. Sajous (of Philadelphia). It will work in coöperation with the Belgian Relief Committee.

APPLES FOR THE FRONT AS AN ANTISCORBUTIC.—Dr. H. Benjafield, of Moonah, Tasmania, in a letter dated Sept. 10th, calls attention to the importance of supplying our soldiers at the front with fresh fruit, especially apples, as a preventive against scurvy. He quotes the testimony of Dr. Buzzard, in "Reynolds's System of Medicine," based on his experience in the Crimean war of 1854, when the allied army had 25.000 men suffering therefrom, of whom thousands died, while the suffering from wounds and other diseases is increased thereby He suggests that Australia should begin at once to organise for the despatch of apples against the winter. At least 50,000 cases a week will be required. Doubtless when the need is realised much will be given, but measures should be taken also to purchase as near to cost price as possible. England should send her share, but he suggests that perhaps Canada and the United States would help. Dr. Benjafield points out that Professor McAlpine and others have shown that the health-giving properties of the apple are found in and immediately beneath the skin; consequently, a pound of sound two inch apples would contain more than a similar quantity of large fruit. The suggestion seems worthy of attention.

Medical News.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF ENGLAND.—At a meeting of Comitia of the Royal College of Physicians on Oct. 29th and of the Council of the Royal College of Surgeons on Nov. 12th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon the following 67 candidates who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board, and have complied with the necessary by-laws:—

Ahmed Abdel-Al, Guy's Hospital; Bertram Pulvermacher Allinson University College Hospital; Lalit Mohan Banerji, L.M.S. Calcutta Calcutta University and St. Bartholomew's Hospital; George Arthur Batchelor, St. Mary's Hospital; William Arthur Hazlerigg Noel Bell, St. Thomas's Hospital; William Francis Bensted-Smith, Cambridge University and Middlesex Hospital; Geoffrey Alwyn Gershom Bonser, B.A. Cantab., Cambridge University and St. Thomas's Hospital; William Edward Hugh Bull, B.A. Cantab., Cambridge University and London Hospital; Percy Herbert Burton, London Hospital; Sam Nathaniel Cohen, Leeds University; Gordon Cranstoun, B.A. Oxon., Oxford University and St. Thomas's Hospital; Harold Armstrong Crouch, B.A. Cantab., Cambridge University and London Hospital; John Duncan Legge Currie, Cambridge University and St. Bartholomew's Hospital; Delphine Gertrude D'Abreu, L.M.S. Punjab, Lahore University; John Edgar Davies, Guy's Hospital; John Llewellyn Davies, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; John Rhys Davies, Cardiff and Middlesex Hospital; Frederick Henry Dodd, Guy's Hospital; Hugh Alderson Fawcett, University College Hospital; Herbert Leslie Garson, B.A. Cantab., Cambridge University and St. Thomas's Hospital; James Alfred Gregory, Manchester University; David William Griffith, Cardiff and St. Thomas's Hospital; Stanley Sextus Barrymore Harrison, Guy's Hospital; William Clavering Hartgill, Otago University and London Hospital; Mary Isabel Hemingway, Birmingham University; Alec George Holman, London Hospital; John Christopher Jones, M.B., Ch.B. Birmingham, Birmingham University; Tom Ramsden Kenworthy, St. Bartholomew's Hospital and Leeds University; Geoffrey William King, Guy's Hospital; Louis Gaston Le Blanc, St. Bartholomew's Hospital; Helena Rosa Lowenfeld, Royal Free Hospital; Henry Wingate Maltby, St. Bartholomew's Hospital; Pestanji Manekji Masina, L.M.S.S.A. Lond., Bombay University and University College Hospital; Gerald Woffindin Maw, University College Hospital; Percy Uvedale Mawer, St. Bartholomew's Hospital; James Allen Montgomery, M.D. Manitoba, Manitoba University and London Hospital; William Howard Nicholls, Guy's Hospital; Arthur Henry Pemberton, University College Hospital; Alan Cecil Perry, London Hospital; Baddelianage Don Hugo Philip, L.M.S. Ceylon, Ceylon Medical College and London Hospital; H. Rivers Pollock, B.A. Cantab., Cambridge University and King's College Hospital; John Sandys Pooley, Cambridge University and St. Thomas's Hospital; Reginald Norman Porritt, B.A. Cantab., Cambridge University and London Hospital; Frank Greenhalgh Prestwich, Manchester University; Nicholas Purcell, M.B., Ch.B. Edinburgh, Edinburgh University and London Hospital; Philip Hugh Rawson, London Hospital; Geoffrey Stanhope Robinson, B.A. Oxon., Oxford University and St. Bartholomew's Hospital; Clive Watney Roe, Charing Cross Hospital; William Albert Rogerson, Manchester University; William Hugh Cowie Romanis, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Pinthu Sai, Cambridge University and St. Thomas's Hospital; Mary Schofield, Royal Free Hospital; Donald Charles Scott, Durham University and Guy's Hospital; Edward Wheeler Scripture, M.D. Munich, Munich University and St. Bartholomew's Hospital; John Hunter Sewart, University College Hospital; Peter de Safforie Smith, Birmingham University; Harry Neville Stafford, B.A. Cantab., Cambridge University and St. Thomas's Hospital; John Frank Herbert Stallman, Guy's Hospital; Richard Patrick Aloysius Starkie, Cambridge University and St. Thomas's Hospital; Horatio Thomas, B.Sc. Lond., University College, Cardiff, and St. Mary's Hospital; John Oscar Thomas, King's College and Westminster Hospital; William Godfried Lorenz Wambeek, Ceylon Medical College and Middlesex Hospital; John Rollo Noel Warburton, St. Thomas's Hospital; Watkin Watkins, University College, Cardiff, and University College Hospital; Thomas Burges Welch, St. Bartholomew's Hospital; Douglas Henry David Wooderson, St. Bartholomew's Hospital; William Arthur Young, B.Sc. Lond., Guy's Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The Council conferred the Diploma of Fellow upon Robert Lister Horton, M.B., B.S. Lond., L.R.C.P., Lond., M.R.C.S. Eng., of University College Hospital, who has previously passed the examination and has now attained the requisite age of 25 years. The licence in Dental Surgery was also conferred upon Francis Arthur Everett, Charing Cross and Royal Dental Hospitals, who has passed the requisite examinations and has now complied with the by-laws.—At the Primary Examination for the Fellowship in Anatomy and Physiology, held on Nov. 4th, 5th, 10th, and 11th, 57 candidates presented themselves, of whom 15 were approved and 42 were rejected. Among the successful candidates were two ladies—Miss Bostock and Miss Ingleby, both of the London School of Medicine for Women. The following is a list of the successful candidates :—

Jugalkishor Adhya, M.B. Calcutta, Calcutta University and Middlesex Hospital ; Marion Noel Bostock, London School of Medicine for Women ; Leonard Snowden Debenham, Guy's Hospital ; Spencer Graeme Dunn, St. Bartholomew's Hospital ; Benjamin Thomas Edye, M.B., Ch.M. Sydney, Sydney University and University College ; Arthur Norman Hooper, B.A., B C. Cantab., M.R.C.S., L.R.C.P., Cambridge and Birmingham Universities ; John Basil Hume, St. Bartholomew's Hospital ; Helen Ingleby, London School of Medicine for Women ; Harold George Victor Mence, Birmingham University ; Arthur Eisdell Moore, M.D., Ch.B. Edin., Edinburgh University and St. Mary's Hospital ; Sydney Devenish Rhind, St. George's Hospital and King's College ; Tribhovandas Oghaddes Shah, M.R.C.S., L.R.C.P., Middlesex Hospital ; James Renfrew White, M.B., B.S. New Zealand, M.R.C.S., L.R.C.P., New Zealand University and Middlesex Hospital ; David Whyte, M.B., Ch.B. Otago, Otago University ; and Graham Selby Wilson, King's College.

THE next session of the General Medical Council will commence on Tuesday, Nov. 24th.

Mr. George Mitchell Winter, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., D.P.H., has been reappointed deputy mayor of Torquay for the sixth consecutive year.

UNIVERSITY OF CAMBRIDGE.—The Raymond Horton-Smith prize has been awarded to Philip H. Bahr, M.A., M.B. Cantab., for his thesis for the M.D. degree on the subject of Research in Sprue.

WE announce with much regret the death on Saturday last of Dr. Eustace Smith, the veteran authority on diseases of children, who was for 43 years a member of the active medical staff of the East London Hospital for Children.

MEDICAL CALLS TO THE BAR.—Dr. W. Collingridge, of Pembury, late medical officer of health, City and Port of London, was on Nov. 17th called to the Bar as a Member of the Honourable Society of Gray's Inn ; and on the same day Dr. James Campbell McNeillie, medical officer of the East Rand mines and hospital, was called to the Bar as a Member of the Middle Temple.

Dr. Aldo Castellani, Director of the Clinic for Tropical Diseases, Colombo, Ceylon, has been offered by the Italian Government, and has accepted, the professorship of tropical medicine in the University of Naples and the directorship of the Royal Clinique for Tropical Diseases in the same city. Dr. Castellani will take up his duties at the beginning of 1915.

CENTRAL MIDWIVES BOARD.—A special meeting of the Central Midwives Board was held at Caxton House, Westminster, on Nov. 12th, with Sir Francis H. Champneys in the chair. A number of midwives were struck off the roll, the following charges amongst others having been brought forward. The midwife being guilty of misconduct in assisting an uncertified person to attend women in childbirth otherwise than under the direction of a qualified medical practitioner, and in aiding and abetting the aforesaid person to commit an offence against Section 1 (2) of the Midwives Act, 1902. The midwife not being scrupulously clean in her person, appliances, and house, as required by Rule E. 1 ; not taking and recording the pulse and temperature of the patient at each visit, as required by Rule E. 13. The advice of a registered medical practitioner having been sought, the midwife failed to notify the local supervising authority thereof, as required by Rule E. 21 (1) ; she washed the patient once only, and then did not comply with the antiseptic requirements of Rule E. 7. The patient suffering from loss of blood, the midwife did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (2). That having been in contact with a person suffering from puerperal fever the midwife continued in attendance upon patients without having undergone any disinfection to the satisfaction of the local supervising authority, as required by Rule E. 5. Medical aid having been sought for a patient, the midwife neglected to send any notification thereof to the local supervising authority, as required by Rule E. 21 (1), and she neglected and declined to carry out the instructions of the doctor who had been sent for, as required by Rule E. 6. A child having died before the attendance of a registered medical practitioner, the midwife failed to notify the local supervising authority thereof, as required by Rule E. 21 (1), and she did not keep her register of cases as required by Rule E. 23.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Parliament and the War.

PARLIAMENT has assembled for a new session. It is understood that the sittings will not be prolonged and will be entirely devoted to dealing with the financial and other problems arising out of the war. New taxation is necessary, and also a war loan for £350,000,000. The Chancellor of the Exchequer has announced that the income tax is to be doubled. The full increase does not come into operation in respect of the current year, when the rates will be 1*s.* in the £ on earned income and 1*s.* 8*d.* on unearned. Next year the rates will be 1*s.* 6*d.* and 2*s.* 6*d.* respectively. The war has been costing this country from £900,000 to £1,000,000 a day, and Mr. LLOYD GEORGE estimates that for the first full year it will cost £450,000,000. No criticism has been made of the Government proposals, because in all quarters there is a profound feeling that the world should have the spectacle of a nation absolutely united in the great emergency with which we are now confronted.

HOUSE OF COMMONS.

MONDAY, NOV. 16TH.

British Medical Men in Germany.

Mr. HAY MORGAN asked the Secretary of State for Foreign Affairs whether any steps had been taken to secure the release of medical men who were British subjects detained in Germany; and, if so, whether he could give any indication as to the date when they would be allowed to return home.—Sir EDWARD GREY replied: His Majesty's Government were informed on Oct. 3rd that the German Government might allow doctors and ministers of religion to return from Germany, and on Oct. 8th His Majesty's Government made a definite offer of reciprocal treatment with regard to these and three other classes of persons. On Oct. 22nd His Majesty's Government were informed that the German Government had accepted the offer and would permit the departure of medical men and ministers of religion, and since then medical men have been returning, though a doctor was detained at Bad Nauheim until last week. The answer refers to civilians only.

The Health of the Troops.

Lord CLAUDE HAMILTON asked the Secretary of State for the Home Department whether His Majesty's Government would introduce and pass a measure empowering magistrates to issue warrants for the summary arrest of women of notorious bad character who were infesting the neighbourhood of the various military camps in the United Kingdom, to the detriment of the morals and health of the troops, and further to empower the magistracy to commit such women for detention in a hospital or reformatory until the close of the war.—Mr. MCKENNA said in reply: While the Government recognise the serious nature of the evil to which the noble lord alludes, I fear it would not be possible to deal with it effectively by such legislation as he recommends. We must rely partly on the organised efforts which are being made by voluntary women workers and partly on the firm enforcement of the existing law by the police and the magistrates.

Care of Soldiers' Feet.

Answering Sir CLEMENT KINLOCH-COOKE, Mr. TENNANT (Under Secretary of State for War) said: The arrangements for the employment of chiropodists in the regular army have been made applicable to the Territorial Forces.

Calf Lymph for the Army.

In reply to Sir CLEMENT KINLOCH-COOKE, Mr. TENNANT said: The vaccination lymph used in the army is obtained from the Local Government Board establishment at Hendon, and is believed to be the same as that supplied by the Board to public vaccinators.

The Wastage in the New Army.

In the course of the debate on the vote of credit Sir IVOR HERBERT remarked that there was an abnormal wastage going on in the ranks of units of the new army which had already been raised—a wastage which required some explanation and the adoption of measures to check it. According to figures which had been given to him, there had been a wastage in many units of as much as from 30 to 40 per cent. of the strength of the unit, and it was due to what was known in military language generally as "avoidable disease." It was a very serious question, and it was one which it behoved the Government and the military authorities to give close attention to, now that they were dealing with the question of raising a further number of recruits. It was unavoidable possibly that a large number of young men thrown into temptation which they had never faced before should suffer in the way which they had done. But at the same time it should have been evident to those accustomed to military organisation that special police measures were required to restrain the causes of this most unfortunate condition of affairs. At present, to put it plainly, the great wastage that was going on in the ranks of the new army came from two causes, and two causes only—drink and women. But both these were causes which could be dealt with by administrative measures, and he urged that some measures should be taken. If the powers in the hands of either the local bodies or the military authorities were not sufficient to restrain the sale of drink or the other social evil, then the Government should come to Parliament and propose such measures as might be necessary to enable them to deal with the problems. That anything like that wastage should be allowed to go on unchecked in the ranks of the new army was certainly a most serious matter. It had been a most distasteful and unpleasant thing for him to bring it before the House of Commons, and it was only a sense of duty and also the knowledge which he had gained of these things during his military experience that had induced him to rise and speak on this question.

Sir T. WHITTAKER urged the Government to take every means to check insobriety amongst recruits.

Mr. COURTHOPE doubted very much whether a single unit could be named in which either 30 per cent. or 40 per cent. of wastage had occurred. He would say without fear of contradiction that in the great majority of localities and the great majority of units the sobriety of the recruits had been very noticeable, and there had been an astonishing freedom from avoidable disease. In the unit with which he was connected, of some 1600 or 1700 men who had been up since the beginning of the war and stationed in places in which it might be expected that there would be temptation, there had not been a single case of venereal disease. He did not quote this as being exceptional, because he knew of scores and scores of units with an equally good record, but he did not want it to go out as the result of this debate that there had been a great prevalence of avoidable disease or excessive drunkenness.

Mr. ASQUITH (in his reply to the debate said): An honourable Member has raised the question of the alleged demoralisation through drink and other causes to which he adverted of a substantial proportion of the new army. I think that my honourable and gallant friend—I am sure quite unintentionally—took in this respect a much too gloomy view. We have made most careful inquiry into the matter, and to say that a percentage of from 30 to 40 of these men are disabled from preventable causes, from diseases, from serving their country in any useful manner is, I believe, entirely without any foundation. The Adjutant-General has made most careful inquiry into the matter. I do not commit myself to specific figures, but I believe that it would be far nearer the truth to say that there have not been more than 10, or at the outside 15, per cent. of cases of disease of every sort or kind, not only these particular ones, but all sorts of diseases of every kind, and on the whole I do not believe that there has ever been brought together a body of men who have comported themselves so well and shown such a regard for sobriety and decency of conduct as the new recruits for the army. Undoubtedly these men, as is always the case when a large aggregation of comparatively young men are brought together in this casual way, are exposed to temptation to which some of them are probably strangers and to which now and again individuals succumb. But I believe if you take the average standard of conduct that it is worthy of the country and worthy of the cause. But my honourable friend may be quite sure that the Adjutant-General, in conjunction with the civil authorities, is taking every possible step to remove all temptation and to secure the highest possible standard of sobriety and conduct in those troops.

WEDNESDAY, NOV. 18TH.

Medical Practitioners with Temporary Commissions.

Sir PHILIP MAGNUS asked the Financial Secretary to the War Office whether a medical practitioner now serving in the Royal Army Medical Corps with a temporary commission was entitled to a pension for wounds at the same rate and under the same conditions as officers holding permanent commissions; and whether, in the event of his death, his widow and orphans would be entitled to a pension, and, if so, at what rate.—Mr. H. BAKER replied: Yes, Sir; the rates and conditions are fully set out in the pay warrant.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CASTELLANI, ALDO, M.D. Florence, has been appointed Professor of Tropical Medicine in the University of Naples.

FERGUSON, J. J. HARROWER, M.B., Ch.B. Edin., has been appointed Medical Superintendent at Fife and Kinross Asylum, Springfield.

PHILLIPS, G. C. J., L.S.A., M.R.C.S. Eng., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Woburn Sands District of the County of Bedford.

RAMSDEN, WALTER, M.D., Ch.B. Oxon., has been appointed to the Johnston Chair of Biochemistry in the University of Liverpool.

WADSWORTH, T. W., M.D., Ch.B. Liverp., has been appointed Temporary Medical Officer of Health for the County of Dorset.

WEAR, A. H., M.B., B.S. Durh., has been appointed Assistant Medical Officer of Health and School Medical Officer to the South Shields Education Committee.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

BIRKENHEAD UNION INFIRMARY.—Female Resident Assistant Medical Officer. Salary at rate of £150 per annum, with board, washing and apartments.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

BIRMINGHAM, CITY OF.—Assistant Medical Officer of Health. Salary £300 per annum.

BIRMINGHAM EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary at rate of £300 per annum.

BIRMINGHAM, WEST HEATH SANATORIUM AND HOSPITAL.—Medical Superintendent, unmarried. Salary at rate of £300 per annum, with board and residence.

BIRMINGHAM, YARDLEY-ROAD SANATORIUM AND ANTI-TUBERCULOSIS CENTRE.—First Assistant Medical Officer. Salary £250 per annum, with board and residence. Also Third Assistant Medical Officer. Salary £200 per annum, with board and residence.

BLACKBURN COUNTY BOROUGH.—Temporary Resident Medical Officer. Salary £200 per annum, with board and residence.

BRADFORD POOR-LAW UNION, ST. LUKE'S HOSPITAL AND UNION HOUSE.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with rations, apartments, and washing.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with apartments, board, and laundry.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—House Surgeons for six months. Salary at rate of £100 per annum, with board, residence, and laundry. Also Resident Surgical Officer. Salary £160 per annum, with board, laundry, and apartments.

CARLISLE, CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.

CHESTER COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.

CHICHESTER, ROYAL WEST SUSSEX HOSPITAL.—House Surgeon, unmarried. Salary £110 per annum, with board, residence, and washing.

CITY OF WESTMINSTER UNION INFIRMARY, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—Junior House Surgeon. Salary £100 per annum, with rooms, board, washing, and attendance.

DERBY BOROUGH ISOLATION HOSPITAL AND SANATORIUM.—Resident Medical Officer. Salary £200 per annum, with board and residence.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £120 per annum, with board, residence, attendance, and washing.

DURHAM COUNTY COUNCIL.—Assistant School Medical Officer. Salary £300 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

FAREHAM, HANTS COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

Fulham Infirmary, St. Dunstan's-road, Hammersmith, W.—Assistant Medical Superintendent and Junior Assistant Medical Officer, unmarried. Salaries at rate of £200 and £160 per annum respectively, with board, apartments, attendance, and washing.

Glasgow Royal Maternity and Women's Hospital (Obstetrical Department).—Two Out-door House Surgeons at the Hospital and Out-door House Surgeon at West-end Branch for three months.

Gloucester, Gloucestershire Royal Infirmary and Eye Institution.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £200 per annum, with board, lodging, and washing.

Hackney Union Infirmary, High-street, Homerton, N.E.—Junior Assistant Medical Officer for six months. Salary £200 per annum, with rations, apartments, and attendance.

Hampshire County Council.—Tuberculosis Officer. Salary £500 per annum.

Hospital for Consumption and Diseases of the Chest, Brompton. —House Physician for six months. Salary 30 guineas.

Huddersfield Royal Infirmary.—Senior and Junior Assistant House Surgeons. Salary £80 per annum each, with board, rooms, and washing.

Huddersfield, Storthes Hall Asylum, Kirkburton.—Assistant Medical Officer. Salary £230 per annum, with rooms, board, attendance, and washing.

Keighley, Borough of.—Assistant School Medical Officer and Assistant Medical Officer of Health. Salary £300 per annum.

Leeds Hospitals for Infectious Diseases and Tuberculosis.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £150 per annum, with board, lodging, and washing.

Leeds Public Dispensary.—Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

Leyton, Walthamstow, and Wanstead Children's 'and General Hospital.—Resident House Surgeon. Salary at rate of £125 per annum, with rooms, board, and washing.

Liverpool, Brownlow Hill Institution.—Resident Assistant Medical Officer. Salary £200 per annum, with apartments and resident allowances.

London Temperance Hospital, Hampstead-road, N.W.—Female Assistant Resident Medical Officer. Salary at rate of £120 per annum, with board, residence, and laundry.

Lowestoft and North Suffolk Hospital.—House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and laundry.

Macclesfield General Infirmary.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

Maidstone, Kent County Asylum.—Female Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, quarters, attendance, washing, &c.

Manchester, City of.—Assistant Tuberculosis Officer. Salary £350 per annum.

Manchester Institution at Crumpsall.—Junior Resident Assistant Medical Officer, unmarried. Salary £160 per annum, with rations, apartments, fire, light, washing, and attendance.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester Royal Eye Hospital.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

Metropolitan Ear, Nose, and Throat Hospital, Fitzroy-square, W.—House Surgeon. Salary £150 per annum.

Middlesbrough, North Ormesby Hospital.—House Surgeon. Salary £150 per annum, with board, washing, and attendance.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Senior House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

National Hospital for Diseases of the Heart, Westmoreland-street, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and washing.

National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, W.C.—Senior and Junior House Physicians. Salary £50 per annum each, with board and residence.

Newcastle, Co. Wicklow, Royal National Hospital for Consumption for Ireland.—Assistant Resident Medical Officer. Salary at rate of £200 per annum, with board and residence.

Newcastle-upon-Tyne Education Committee.—Assistant Medical Officers (Male and One Female). Salary £250 per annum.

Newcastle-upon-Tyne Poor-law Institution Infirmary.—Female Second Assistant Resident Medical Officer, unmarried. Salary at rate of £150 per annum, with apartments, rations, and washing.

Newport (Mon.). Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

Northumberland, County of.—Female Assistant School Medical Inspector. Salary £300 per annum.

Nottingham General Hospital.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

Preston Royal Infirmary.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

Royal College of Physicians, Pall Mall East.—Milroy Lecturer for 1916.

Royal Free Hospital, Gray's Inn-road, W.C.—Acting Assistant Physician

Royal London Ophthalmic Hospital, City-road, E.C.—Two Refraction Assistants. Salary at rate of £50 per annum.

Royal Waterloo Hospital for Children and Women, S.E.—Senior and Junior Resident Medical Officers. Salaries at rate of £90 and £70 per annum respectively, with board and washing.

St. Pancras North Infirmary, Dartmouth Park Hill, Highgate, N.—Junior Assistant Medical Superintendent. Salary at rate of £140 per annum, with apartments, board, and washing.

St. Pancras South Infirmary, Pancras-road, N.W.—Senior Assistant Medical Superintendent and Senior Assistant Medical Officer of House adjacent. Salary at rate of £225 per annum, with board, apartments, and washing. Also Female Junior Assistant Medical Officer. Salary at rate of £150 per annum, with apartments, board, and washing.

Salford Royal Hospital.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

Salford Union Infirmary.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

Sheffield, East-End Branch of the Children's Hospital.—House Surgeon. Salary £120 per annum, with board and residence.

Sheffield Royal Hospital.—Assistant House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing

Sheffield Royal Infirmary.—House Surgeon. Salary £100 per annum, with board and residence.

Sheffield, South Yorkshire Asylum, Wadsley.—Fourth Assistant Medical Officer. Salary £200 per annum, with apartments, board, and attendance.

Shetland, County of.—School Medical Officer, County Medical Officer and Mainland District Medical Officer, and Tuberculosis Officer. Salary £500 per annum.

South Shields County Borough.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £300 per annum.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

Staffordshire County Council Mental Hospital, Cheddleton, Leek.—Senior Assistant Medical Officer. Salary £320 per annum, with apartments, board, and washing.

Sunderland, Monkwearmouth and Southwick Hospital.—House Surgeon. Salary £130 per annum, with board, lodging, and washing.

Swansea Union Institution.—Resident Assistant Medical Officer. Salary £295 per annum.

Taunton, Taunton and Somerset Hospital.—Senior House Surgeon and Assistant House Surgeon. Salaries £120 and £80 per annum respectively, with board, lodging, and laundry.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

Tunbridge Wells General Hospital.—House Physician, unmarried. Salary £100 per annum, with board, residence, &c.

University of London.—University Chair of Physiology at London Hospital Medical College. Salary £600 per annum.

Victoria Hospital for Children, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £40, with board, laundry, and lodging.

Wakefield, West Riding Asylum.—Locum Tenens Assistant Medical Officer. Salary as arranged, with apartments, board, and travelling expenses.

Walsall and District Hospital.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

Warrington Infirmary and Dispensary.—Senior House Surgeon. Salary at rate of £200 per annum, with board, apartments, and laundry.

West End Hospital for Diseases of the Nervous System, Paralysis, and Epilepsy, 73, Welbeck-street, W.—Clinical Assistants to Out-patients' Physicians. Also Anæsthetist.

West Ham and Eastern General Hospital, Stratford, E.—Senior House Physician. Salary £120 per annum, with board, residence, and washing.

Westminster Hospital.—Surgical Registrar. Salary £50 per annum.

Whitechapel Union Infirmary, Vallance-road, E.—First Assistant Resident Medical Officer. Salary £160 per annum, with rations, apartments, and washing.

Wigan, Royal Albert Edward Infirmary and Dispensary.—Senior House Surgeon. Salary £170 per annum, with board, apartments, and washing.

Wolverhampton and Staffordshire General Hospital.—Resident Medical Officer for six months. Salary at rate of £125 per annum, with board, rooms, and laundry.

Worcester County and City Asylum, Powick, near Worcester.—Junior Assistant Medical Officer. Salary £225 per annum, with board, lodging, and washing.

Worcester General Infirmary.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

Worksop Victoria Hospital and Dispensary.—Medical Officer and House Surgeon. Salary £150 per annum, with rooms, coal, light, and attendance.

York County Hospital.—House Physician for six months. Salary at rate of £100 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTHS.

Vellacott.—On Nov. 12th, at Tamar-terrace, Devonport, the wife of Harold F. Vellacott, F.R.C.S., of a son.

Vost.—On Nov. 10th, at "Fyzabad," Crystal Palace Park-road, Sydenham, the wife of Lieutenant-Colonel Vost, I.M.S., of a daughter.

MARRIAGES.

Brown—Simpson.—On Nov. 13th, at Adelaide, South Australia, Gilbert Brown, M.B., Ch.B., of Snowtown, South Australia, to Marie Simpson, M.B., B.S., D.P.H., of Nottingham, England.

DEATHS.

Hyde.—On Nov. 8th, at Croyde, N. Devon, George Edwin Hyde, M.R.C.S., L.R.C.P. Lond., of Bassett Heath, Southampton (late of Worcester), aged 79 years.

Moline.—On Nov. 10th, at Walton-street, S.W., Paul Frank Moline, M.B., M.R.C.S., aged 57 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

ACTION ON A SURGEON'S ACCOUNT.

IN the Manchester county court Professor J. W. Smith obtained judgment for £15 15*s*. and costs against Mr. A. Dasent, a clerk in the House of Commons, for services rendered. The plaintiff had been summoned at night from Manchester by telephone to attend the defendant who was on a visit to Lord Acton at Appleton Hall, a distance of 20 miles, and had gone prepared to perform an operation, which had been found unnecessary. The defendant, whose salary was £500 per annum, claimed to be prevented by poverty from paying, but had made no such suggestion when he first received the account, or, the plaintiff said, it would have been reduced. The defendant had written to say that he could not afford either to go to Manchester to defend the action or to employ a solicitor, and to ask that the claim should be heard in a London court. His honour Judge Mellor, however, observed that the defendant was able to go to Manchester to stay with Lord Acton, and found that the fee asked was reasonable.

THE "LONDON PANEL COMMITTEE GAZETTE."

To the Editor of THE LANCET.

SIR,—In reference to your comments on the "London Panel Committee Gazette," I desire as chairman of the committee dealing with the matter of over-prescribing in the county to say that neither I nor my committee had anything to do with this "surprising document." Kindly publish this, because the "document" might deter *gentlemen* from coming before the committee.

I am, Sir, yours faithfully,
Greenwich, Nov. 13th, 1914. C. W. HOGARTH.

BACILLARY AND AMŒBIC DYSENTERY.

To the Editor of THE LANCET.

SIR,—With reference to the question recently proposed in THE LANCET (Sept. 12th, p. 686) as to the diagnosis between bacillary and amœbic dysentery through inspection of the stools, it may be mentioned that Fleet-Surgeon Staby and Staff-Surgeon Kobert, of the German navy, working at Tsingtau, in China, made a report on the matter in the Blue-book on the Health of the German Navy for 1908–9, p. 61. They found that there were very few white corpuscles in the slime of amœbic dysentery, which was consequently transparent; many white corpuscles in the slime of bacillary dysentery, which is whitish and opaque. When blood is also present the slime of amœbic dysentery is clear and like raspberry jelly, while that of bacillary dysentery is a dirty brownish-red. The diagnosis can often be made with the naked eye, but the microscope further shows Charcot-Leyden crystals in the amœbic stools.

I am, Sir, yours faithfully,
W. E. HOME, M.D. Edin.,
Fleet-Surgeon, R.N. (retired.)
Victoria, B.C., Oct. 3rd, 1914.

THE "WELLCOME" PHOTOGRAPHIC EXPOSURE RECORD AND DIARY.

THE little pocket diary and exposure record, price in the British Isles 1*s*., which Messrs. Burroughs, Wellcome, and Co. have now issued for several years past, makes an excellent Christmas present for photographers, and for this reason the 1915 diary has been issued in good time. It is exactly suited to the needs of the amateur, while it contains valuable reminders for the expert photographer. Clear and simple directions are given as to the various processes of photography, and all sorts of "wrinkles" are described. Fixed inside the cover of the book is a calendar giving the necessary exposure for any time of the day or year. The book is specially ruled for the many details which the photographer requires to note. Editions are published for the northern and southern hemispheres and for the United States.

THE International Sleeping Car Company last Saturday commenced to run sleeping car services between Paris and the Riviera as far as Mentone and between Paris and Rome. Both services leave the Gare de Lyon, Paris, at 8.5. P.M. daily. From London the obviously best service to join these special services is the 10 A.M. Victoria, Folkestone, and Dieppe, arriving in Paris at 9.42 P.M., where the night must be passed, joining the special service the next day at 8.5 P.M. The company, whose offices are at 20, Cockspur-street, Charing Cross, issue tickets and advise as to hotels in Paris where passengers may stay at night. In this connexion we observe that the South-Eastern and Chatham Railway call the particular attention of passengers by the 10 A.M. train to the necessity of their heavy luggage and keys being at Victoria-station by 8 A.M. and their hand luggage by 9 A.M.

W. F.—The *Indian Ambulance Gazette* is published at Jutogh, Simla, India, monthly, price 6 annas, post free.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY.

SECTION OF ODONTOLOGY (Hon. Secretaries—F. Coleman, F. R. Smyth): at 8 P.M.

Paper:

Dr. H. Lambert Lack: The Influence of Nasal Obstruction on Abnormalities of the Jaws.

(SECTION OF LARYNGOLOGY —The Members of this Section are specially invited to attend this meeting.)

THURSDAY.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretaries—Chas. W. Buckley, J. Campbell McClure): at 5.30 P.M.

Dr. Sunderland: Old London's Spas, Baths, and Wells.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—Philip Turner, J. D. Rolleston, Sidney Gilford): at 4.30 P.M.

Cases:

Dr. F. J Poynton: Case of Cleido-cranio-dystosis with Pressure on Brachial Plexus; Symptoms Relieved by Operation.
Dr. E. B Gunson: Infant with Tooth Erupted at Birth.
Dr. Bernard Myers: Splenomegaly Improved by Anti-syphilitic Treatment.
Dr. J. D. Rolleston: Giant Nævus.
Mr. L. Bromley: Tumour of Femur.
Mr. Philip Turner: Case of Undescended Testicle; Result of Operation.
Dr. T. R. Whipham: Two Cases of Heart Block.

SECTION OF EPIDEMIOLOGY AND STATE MEDICINE (Hon. Secretaries—G. S. Buchanan, W. Butler): at 8.30 P.M.

Papers:

Dr. W. G. Armstrong (Senior Medical Officer of Public Health, New South Wales): The Recent Epidemic of Small-pox in New South Wales: its Diagnosis and Prevention.
Dr. J. Burton Cleland and Dr. E. W. Ferguson (State Microbiological Laboratory, Department of Public Health, New South Wales): The Nature of the Recent Small-pox Epidemic in Australia.

(Members desiring advance proofs should communicate with Dr. G. S. Buchanan, Local Government Board.)

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Resumed Discussion on the Surgical Experiences of the Present War. Continued by Mr. D'Arcy Power, Mr. Symonds, Mr. R. P. Rowlands, Dr. Embleton, Dr. I. Bruce, and others.

HUNTERIAN SOCIETY, London Hospital, Mile End-road, E.

WEDNESDAY.—4 P.M., Clinical Afternoon. Dr. J. H. Sequeira: Demonstration of Skin Diseases.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

WEDNESDAY.—8 P.M., Sir William A. Tilden: The Supply of Chemicals to Great Britain and her Dependencies.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Discussion on the Drug Habit and its Treatment by Modern Methods (opened by Dr. C. Miller, Dr. T. B. Hyslop, and Dr. Claye Shaw).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. J. B. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Nose, Throat, and Ear (Mr. H. D. Gillies). X Rays and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3.30 P.M., Special Demonstration of Selected Eye Cases (Mr. R. P. Brooks). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:- Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Lecture:—Dr. A. Turner: Clinical Cases.
FRIDAY.—3.30 P.M., Lecture:—Dr. F. Buzzard: Clinical Cases.

CENTRAL LONDON THROAT. NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY.—3 P.M., Lecture:—Mr. Stuart-Low: The Ear.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—6.15 P.M., Clinical Lecture.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—4 P.M., Dr. C. R. Kempster: X Rays, Measurement of Dose.
THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Acne, Real and "So-called."

CHADWICK PUBLIC LECTURES, Bedford College, Regent's Park, N.W.

SATURDAY.—3 P.M., Dr. A. T. Nankivell: Camp, Ship, and Hospital Hygiene—III., Nursing our Soldiers and Sailors Back to Health (illustrated with lantern slides).

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

THURSDAY.—ANCOATS HOSPITAL, Mill-street.—4.30 P.M., Mr. H. Platt: Static Disabilities of the Foot.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

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METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, Nov. 18th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 12	29 90	W.	0·01	72	55	42	41	44	Fine
" 13	29·65	S.W.	0·07	57	56	44	51	53	Overcast
" 14	29 51	N.	...	75	44	42	40	42	Cloudy
" 15	29·38	S.E.	0·04	75	53	36	41	45	Cloudy
" 16	29 40	N.	—	71	48	36	42	44	Cloudy
" 17	30·26	N.	...	69	45	37	36	38	Fine
" 18	30·56	N.E.	...	53	44	37	37	38	Hazy

The following magazines, journals, &c., have been received:— Philippine Journal of Science, Indian Medical Gazette, Medical Review of Reviews, Pediatrics, Midland Medical Journal, Canadian Practitioner, Symons's Meteorological Magazine, Ophthalmology, British Journal of Dental Science, American Journal of Roentgenology, Journal of Surgery, Dublin Journal of Medical Science, Canadian Journal of Medicine and Surgery, Indian Medical Journal, Journal of Hygiene, Clinical Medicine, Bulletin of the Johns Hopkins Hospital.

Communications, Letters, &c., have been received from—

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Y.—York County Hospital, Secretary of.

Z.—Messrs. C. Zimmerman and Co., Lond.

Letters, each with enclosure, are also acknowledged from—

A.—Messrs. G. Allen and Unwin, Lond.; A. J. A.; A. A.; A. S.; Alpha, Aylsham.

B.—Bootham Park Mental Hospital, York, Steward of; Messrs. Boult, Son, and Maple, Liverpool; British Milk Products Co., Lond.; Berry White Medical School, Dibrugarh, Superintendent of; Mr. Brown, Lond.; Bristol General Hospital, Secretary of; Sister Nisbet Brown, Dunmow.

C.—Dr. T. P. Carroll, Kilmeaden; Mr. J. W. Astley Cooper, Cockermouth; Mr. C. Cooper, Lond.; Cardiff Corporation, Treasurer to the; Mr. F. E. Caulfield-Houghton, Dorrington; Casein, Lond., Managing Director of; Co-operation of Temperance Male and Female Nurses, Lond., Secretary of.

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E.—Dr. W. D'Este Emery, Lond.; Surgeon T. L. Ellis, R.N., Lond.

F.—Dr. P. G. Foulkes, Aveley.

G.—Dr. Stanley Gill, Formby; Dr. H. J. Gauvain, Alton; Mr. H. Goadby, Lond.

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I.—International News Co., Lond.; Ingress Abbey Military Hospital, Greenhithe.

J.—Major A. D. Jameson, R.A.M.C., Peshawar; J. B. M.; Dr. G. Jubb, Hartlepool.

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S.—S.P. Charges Co., St. Helens; Messrs. G. Street and Co., Lond.; Dr. G. Sowden, Lond.; Swansea General and Eye Hospital, Secretary of; *Staffordshire Sentinel*, Hanley, Proprietor of; St. Paul's Eye Hospital, Liverpool, Secretary of; Mrs. Simpson, Nottingham; Sunderland Royal Infirmary, Secretary of: Sheffield University, Registrar of.

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V.—Dr. G. R. Vicars, Wood Dalling; Victoria Hospital, Burnley, Secretary of; Val-Mont Territet, Administrator.

W.—Westmorland Consumption Sanatorium, Meathop, Secretary of; Warrington Infirmary, Secretary of; Mr. W. J. Wilcox and Co., Lond.

An Address
ON
THE PATIENT AND THE DISEASE.

Being the First Hunterian Society Lecture for the Session 1914–1915 delivered in the Barber Surgeons' Hall on Oct. 14th,

By Sir DYCE DUCKWORTH, Bart., M.D., LL.D., F.R.C.P.,
CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S AND THE ITALIAN HOSPITALS; SENIOR PHYSICIAN TO THE SEAMEN'S HOSPITAL, GREENWICH.

Mr. President and Gentlemen,—I suppose that the name and work of John Hunter are suggestive rather of anatomy and surgery than of general medicine, but it needs no assurance from physicians to testify to the value of his influence and research on many parts of their art. We are, or certainly ought to be, as ready as the surgeons to carry in our minds his famous aphorism—"Don't think, try, be patient, be accurate." Let us consider the real meaning that this somewhat cryptic statement had for Hunter.

The Ideals of John Hunter.

Research by way of experiment was urged by him just as it had been enjoined previously by Harvey, and the problems in biology which engaged their attention were attacked by similar methods. Mere theories were to be put to the proof, and the secrets of Nature were to be exposed, if possible, and tested by the ordeal of experiment. This was to be the test of the thinking. Any inquiry necessitating research demands meditation, and to correlate the facts elicited from an experiment no less entails a large measure of thinking. Hunter clearly intended to denounce mere theory unsupported by facts. Next he urged patience. This was surely to secure further or confirmatory experiments, and a calm meditation on the results of them. There was to be no hurry or premature disclosure of the conclusions derived from early experiments. New facts were to be weighed, pondered over, and checked by repetition. Research on these lines could alone, in Hunter's opinion, lead to the last point in his aphorism—viz., accuracy or truth as its guiding principle.

It may be well for us to consider how we are carrying out Hunter's advice to-day, at a time when scientific research is more widely and actively pursued than it has ever been, so far following out his recommendation to "try" in many directions. With respect to some of these observations which bear more particularly on therapy, I venture to doubt if we are thinking or meditating adequately upon the results obtained in practice. I doubt still more if we manifest the patience which Hunter would have demanded ere we announced and urged an immediate application of some of the methods which are indicated as warrantable and safe for the treatment of the sick. The human problem is before us here, and we are on holy ground. Surely patience, meditation, and accuracy are the points we need to attend to to-day if we are to unlock the secrets of Nature, and hurry, with eager strain for results, is unseemly in such tasks. Without doubt we are naturally desirous of worthy and dependable results. The public, too, stimulated by a vulgar and debased press, is still more greedy for startling novelties of which it is keen to seek the benefit at our hands, if we are so unwise as to experiment upon them. Indeed, so keen is a section of the public, often well placed and supposed to be intelligent, in this matter that it prescribes for itself, partakes of the vaunted novelties, and becomes, alas, sometimes addicted to drug habits in consequence.

The Direction of Educated Treatment.

I have recalled to you some of John Hunter's principles. I ask you to consider the patient and the disease, and I propose to try to enforce the very plain and simple fact that when we are contemplating disease we have necessarily to consider the subject of it as well. This is not seldom lost sight of. We find books and numerous monographs written distinctly on the subject of treatment for various diseases. It appears to be forgotten that the educated physician treats *patients* and not *diseases*. It is true that many of our modern remedies which issue from the laboratory are mainly for the purpose of combating morbid conditions of the body, and when these consist of specific vaccines or sera which have the power of overcoming specific toxins, we must recognise their value apart from any special features or peculiarities of the particular patient requiring such treatment. The need for such measures is commonly urgent, and time presses for their employment—

Where the greater malady is fix'd,
The lesser is scarce felt.

Thus meningitis, diphtheria, rabies, plague, anthrax, and tetanus admit of no delay in such therapy. In the treatment (preventive) of variola and enteric fever, of syphilis, gonorrhœal arthritis, and several other septic conditions there may be less urgency, and the peculiarities of the patient may often be of minor importance and can wait.

This class of modern remedies is commonly of a specific nature, and its successful employment in many cases is rightly regarded as evidence of the scientific progress of medicine, a progress which is destined ultimately, as some believe, to abolish all empirical or old-fashioned methods of treatment. We are gradually learning to employ these agents more and more, but much remains for further clinical research and a more accurate knowledge of their action. It may be noted that vaccine therapy itself is not yet void of empiricism. Multivalent vaccines, for example, are somewhat akin to the "blunderbuss" prescriptions of a century ago, and yet they sometimes prove of value. I suppose that not a few of us are far from satisfied with the efficacy of tuberculin treatment, or of the value of pneumococcal vaccine in cases of pneumonia; and we are not without evidence that some maladies, plainly of toxic origin, are amenable to the older methods of treatment when vaccine therapy has failed to afford benefit. Amongst these may be mentioned alveolar pyorrhœa, some varieties of acne, and bacilluria. I should always prefer to begin with the older methods before resorting to vaccine treatment, and I would venture to suggest that some of us are now in danger of losing the older acquired knowledge of appropriate treatment for many common ailments.

It is, of course, a vulgar idea that medicines are employed to "cure" diseases. The homœopathic system is founded on nothing else. The charlatan treats diseases. The modern chemist prepares his proprietary compounds to cure diseases. The idea of the patient, and any of his peculiarities, receives no consideration whatever, and is supposed to be of no importance. I think that it may safely be asserted that with the progress of what we term scientific medicine, issuing largely from researches made in the laboratory, the attention of the physician has been much diverted from his patient, and directed to microbiology and biochemical matters. To state this bluntly is in no degree to minimise the supreme importance of these essential studies, but it is necessary to have a wide outlook in this matter, and to watch the outcome of it in medical practice. Modern methods certainly lead sometimes to a rapid diagnosis arrived at by bacteriology, thus yielding important knowledge by a short cut. We find that modern surgery sometimes provides a prompt diagnosis of inoperable conditions which might have been secured by patient clinical investigation without the knife.

We know well that novelties in medicine tend to obsess weak minds for a time, but some of these obsessions may be serious for the patient. To be rendered edentulous in middle life, or earlier, because of a scare of alveolar pyorrhœa which, if it exists, has not been appropriately or adequately dealt with, is surely a grave matter. To regard the large intestine as little else than a misplaced sewer and a vast source of septic mischief, necessitating its ablation on such grounds, may surely be very serious for the patient. To neglect careful examination of all parts of the body in seemingly obscure cases, and to resort promptly to bacteriological inquiries in the absence of such investigation, is hardly a wise or profitable proceeding, especially if a review of the case by thorough clinical methods readily reveals some gross disease overlooked and unsuspected. I venture to believe that in these and other ways we are tending to lose sight of the patient, and are too exclusively concerned with his disease. We are ceasing to pay adequate attention to details and to study the landmarks and varied indications of the individual patient. Our predecessors surpassed us in these methods. We have replaced them by various abstract studies bearing on disease, largely forgetful of the intrinsic interests of the individuals we minister to. Such proceedings may, perhaps, be inevitable for the present, but both patient and disease must rightly and always be considered together.

The Human Element.

In an address delivered last year[1] I expressed the opinion that practical medicine would never become a completely exact science. The human element in the case will always traverse the exactness and precision of pure science, and this factor may never be left out of account. The conception of clinical problems, and our dealings with them, necessitate an empirical element in our work if we be prudent physicians, and a large measure of that element will, as I believe, always remain to claim our careful attention and employment for the best interest of the patient. This matter relates strictly to the *art* of medicine, and it is our art that is now so much ignored and in danger of being lost. I have often remarked that a great physician is a great *artist*, and not a *savant* in the ordinary sense of that term. I would emphasise these words here and now. I suppose that the best physicians of their day have always recognised this position. It is certain, however, that many able physicians have contributed more to pure science than to the art of their profession. The father of medicine distinctly regarded his life-work as an art, and physicians as the servants or administrators of it.[2]

You may ask, What are the particular points which should be noted in patients apart from the morbid symptoms we may recognise? There are many of these. In the first place, there is a personal factor in every patient. We have therefore to discover what any particular ailment signifies to him individually. It may be well-borne or ill-borne by him. We try to ascertain his familial habit of body or specific inborn tendencies. The family history on both sides should be learned as far as possible. A history of previous ailments is important. The degree of recuperative power is found to vary much in different families. In some it is singularly slow, in others it is rapidly manifested. The measure of inherent vitality is found to vary greatly in families. That is a matter of textural or tissue resistance, and it is of singular importance to note in the maladies of aged patients.

Roughly speaking, we may readily observe the tendency to slow repair and a general vulnerability in all persons of a strumous habit of body. Such patients are bad subjects for most ailments. They heal unkindly. There is always the tendency to invasion of tuberculosis as a sequel to prolonged low health. In persons of the lymphatic diathesis we note the tendency to hyperplasia of this system, and should recognise such subjects of lymphatism as ill-fitted for anæsthesia or prolonged surgical operations. Yet in such persons we do not discover the special irritability of the lymph glands met with in strumous individuals. In patients of an arthritic habit of body we find, on the contrary, and not seldom, a large measure of resisting power with much vitality. Thus, a gouty predisposition, inherited or acquired, proves a great security against all forms of tuberculosis, and the textures are distinctly inimical to intrusion or development of tubercle bacilli in such instances. We may often note blended habits of body in individuals, as in the case of children of a gouty father and a strumous mother, the gouty element here proving a saving grace in the offspring as aiding in resisting tuberculosis, or materially checking its progress should tubercle bacilli lodge in their bodies.

It is surely obvious that our ability to frame prognoses in the illnesses of our patients is largely dependent on a careful consideration of such matters as these. To ignore them is to lead to erroneous opinions which must damage our reputation and usefulness as advisers of the public. It would reduce our powers to the level of the veterinary practitioner who is debarred largely from any consideration of such inquiries.

The Need for Clinical Observation.

I would now ask where such important knowledge is to be gained. Certainly not even in the clinical laboratory, for that is no place for gathering it. Neither will bacteriology, biochemistry, radiography, or cardiograms throw any light on the matter. Needless to remark, we need, and we value, all these modern revelations at the hands of experts, but we must avail ourselves of them as affording guides to treatment, and rest assured that by themselves they do not represent all the essentials for a successful practice of medicine. They yield no knowledge as to the personality, tendencies, and inherent textural qualities of our patients. The equipment we need in respect of knowledge of the individuals we treat is only to be gained at the bedside in daily practice. It demands great painstaking, and it occupies much time and thought. Panel practice, therefore, will accomplish little or none of it; hence our deep regret that such essential knowledge must perforce be withheld from large numbers of our worthy brethren who cannot possibly secure it in practice of that kind.

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[1] THE LANCET, Nov. 22nd, 1913, p. 1448, Some Requirements for Modern Clinical Teaching.

[2] “ ὁ ἰητρὸς ὑπηρέτης τῆς τέχνης.”

THE INDICATIONS FOR PARTICULAR TREATMENT.

I pass now to discuss some matters relating to the treatment of patients. We do well to recognise the limitation of specific remedies and to remind ourselves that they have been discovered by simple empiricism. If we mention sulphur, cinchona, ipecacuanha, mercury, and opium we almost exhaust the list. We now know a good deal as to the nature of the specificity of each of them. Empiricism has often provided problems for laboratory research, and will continue to do so. There are few specifics for the greater number of human ailments, although we have helpful remedies to encourage recovery from most of them. We are, or might be, well-nigh distracted with the numbers of alleged specific preparations, with names far more than sesquipedalian, which are daily commended to us, mostly the products of foreign ingenuity, with attestations as to their efficacy which could alone appeal to credulous minds or novelty hunters. Yet we find that many of these are now being prescribed in preference to the approved drugs of the Pharmacopœia.

Some amongst us are keenly alive to the fact that there has been for some time past amongst us a growing disregard for our national Pharmacopœia and a spreading ignorance of its formulæ. I venture to regard this as a serious matter, for it represents a lack and contempt of knowledge which is essential for success in practice and the real welfare of the patient. I fear there are few amongst us to-day who will thus openly express such an opinion, but I will place mine on record. Many of our prescriptions are now laughing-stocks for well-educated pharmacists who have to compound them, and they must wonder at our boldness and our credulity. I am very sorry for the patients of such prescribers. I need hardly remark that we duly note the progress of pharmacy in various directions, and the improvements in many of our formulæ in the Pharmacopœia. We could wish that the pharmacists were less occupied with the distracting novelties I have referred to, and could thus give their time and attention to more important matters of real pharmaceutical interest.

Opinions emanating from the chemical and other laboratories, non-clinical, are not always helpful to us as careful practitioners. Take the case of alcohol as a remedy. We are told that it is a poison and a devitalising agent, and that it has no place for use either in health or disease. The observant clinician, on the contrary, finds it to be extremely useful for the patient. We always knew that in certain doses it was poisonous, but we also knew that persons who used it in strict moderation lived their full term of life, and left no signs of any lesions in their body, which could honestly, and exclusively, be attributed to alcoholic influence. A physician is not a pure chemist, nor is he a pure physiologist. The tolerance for certain drugs is found to vary largely in different patients. Apart from pure idiosyncrasies, the beneficial effects of mercury in the dark-skinned, bilious, and arthritic subjects, and its less satisfactory action in the fair and strumous ones are hardly recognised to-day. Saline aperients are supposed to take its place in the former class, and mercury is now inadequately employed, or with timidity, for many patients. Not many of us have been taught, or have acquired, a knowledge of the value of sarsaparilla in large doses as a restorative remedy in many cachectic conditions. The influence of musk in sometimes turning the scale favourably in perilous conditions of pneumonia is not recognised to-day. These drugs have actually been discarded from the new Pharmacopœia about to be issued. Happily that will not prevent their employment. Our observant predecessors noted these matters, but their teaching has been forgotten or displaced. It did not issue from the laboratory, but from careful observation at the bedside and in daily practice. In regard to the use of opium, I think that we have parted with a good deal of experience bearing on its appropriate use by the mouth in many morbid states, and have come to rely too much upon one of its constituents introduced by way of the hypodermic syringe. Again, with respect to the virtues of cinchona, I think that we lose some of them by selecting so rigidly only one of its constituents for constant use.

The art of prescribing is not limited to mere convenience and rapidity of dispensing. The active principles of some drugs do not always represent the full benefits of the source of them. Those of us who have been trained in our great hospital schools know well the value of many of the formulæ set down in their pharmacopœias. They are always worthy of our regard, because they represent the experience of our observant masters who introduced or adopted them solely on account of their usefulness and power to aid recovery. Generations of their pupils have had good reason to discover this for themselves. There is no fashion or novelty in them, and many of them will, as I believe, be found helpful for all time. I have long been impressed by many of the prescriptions thus employed in the Dublin schools of medicine which have passed down from some of their great clinical masters, and still secure the confidence of their successors.

THE VALUE OF SYMPATHY.

In the best interests of the patient it is necessary for the physician to learn the art of skilled nursing as practised in these days. If he does not understand the details of this service he cannot be competent to direct the nurses who work under him. These duties can be best learned in hospitals with well-disciplined nursing schools, and it should not be neglected or ignored by the clinical clerks and dressers. It was said of one of our greatest clinicians at one time that he was equally able as a physician or as a nurse. Many of us, I doubt not, could testify to the useful teaching we have had from our hospital matrons and sisters.

We may never forget that what is termed the humanity of our profession relates not merely to kindness, gentleness, and sympathy. Our duties must take note of the specially human characters and varied peculiarities of the individuals we treat. This concerns very largely the management of patients, a great clinical art and equipment. We begin our professional work by studying Nature in all her forms, and, as Charles Kingsley remarked, "if we do not know Nature we cannot know Art."

TRUE PROGRESS.

Some of my remarks may lead you to regard me as a strange survivor of the early nineteenth century physicians, and my opinions as little available for the practical duties of to-day. I will, however, venture to remind you that real progress does not consist in wiping out the past. That idea comes from Germany. A prudent veneration for the best of what has been left to us is ever a wholesome sign of the minds that are to guide the future. Well-gathered experience will always count for much in practical medicine. Knowledge that comes too quickly and too copiously has often to be recast and modified, and the elders do good service sometimes by calling a halt for meditation, for open minds and level heads. Moderation is one of the few things that last long in this world.

Scepticism, pure and simple, never won, and never will win, anything in practical medicine, but it has led in time to wider views and a more sane comprehension of its difficulties. Credulity has been well-nigh as harmful, and it leads nowhere. As has been well said, "the wide man is the great man." There can be no narrowness in our art. So we come back to John Hunter and his methods, for we need to labour on by the light which they will ever afford. We have far greater difficulties to meet in our daily duties than fall to the lot of other workers, because we are dealing with our fellow man, an immortal soul-bearing human creature, more complex and strange than any other created being. The physician may never lose sight of this great fact, and it places him on a separate platform from that occupied by any other students of science. Ours is indeed the most human of all the professions. As I have already remarked, we welcome help from all sources of accurate knowledge conducted by experts, especially from those possessing clinical opportunities, and we must receive with caution the teachings which emanate from sources where work is carried on less for absolute accuracy than for gain or mere notoriety. We know well that medicine cannot stand still, for it is essentially a progressive art. Our motto should be "*Ausculta et perpende.*"

I have now only to ask you to consider any of my opinions in the spirit in which I have ventured to present them to you. My sole object has been to set before you what I humbly conceive to be the true relations which we ought to recognise in our practice between the patient and the disease. We must never lose a full consideration for the patient in any effort we make for his welfare and recovery, and we can have no fear that careful scientific progress and observation will fail to add to the perfection of our art.

EDINBURGH MEDICAL MEN AND COMPULSORY MILITARY TRAINING.—A discussion on Compulsory Military Training as it Appears to the Medical Profession was opened by Professor W. Russell at a meeting of the Scottish Medical Guild held in Edinburgh, on Nov. 13th. A motion was proposed that in the opinion of the meeting compulsory training was highly desirable in the interests of the physical and moral welfare of young men and for our national security, and that at the present juncture the members of the medical profession as represented at that meeting should undertake to do what lay in their power towards its attainment. Dr. Graham Brown seconded this motion, and said that we were the only nation in Europe whose men hired other men to fight for them. That was an unfair and undemocratic arrangement, because no man who was physically fit for service should be able to escape service. The proposition was unanimously adopted.

OBSERVATIONS ON MYELOID SARCOMA, WITH AN ANALYSIS OF 50 CASES.*

BY MATTHEW J. STEWART, M.B. GLASG.,
M.R.C.P. LOND.,
CLINICAL PATHOLOGIST, LEEDS GENERAL INFIRMARY; HONORARY DEMONSTRATOR IN CLINICAL PATHOLOGY, UNIVERSITY OF LEEDS.

THERE is perhaps no subject in the whole range of surgical practice where the coöperation of surgeon and pathologist is more necessary than in the case of myeloid sarcoma. Not only the extent of the operation but the ultimate prognosis depends finally on the histological diagnosis, although in most instances it is possible to say, from the naked-eye characters alone, whether or not one is dealing with a case of this kind. On the other hand, a perusal of the literature shows that errors in diagnosis may be made even where the growth is submitted to microscopic examination, and this is generally due to mistaking a malignant giant-celled for a myeloid sarcoma. Although it is the usual teaching nowadays that these growths (myeloids) are of very low malignancy, there still seems to be an unwillingness on the part of many surgeons to treat them by local excision, and this is undoubtedly due, as already indicated, to the fact that in the past cases of so-called myeloid sarcoma have been reported in which death with visceral dissemination occurred at a longer or shorter period after operation.

The purpose of the present communication is to emphasise the importance of distinguishing true myeloids from other giant-celled sarcomata, to advocate conservative treatment of such cases, and to indicate the histological criteria by which the microscopic diagnosis may be made. My remarks are based on an analysis of all the cases of myeloid sarcoma, 50 in number, treated at the Leeds General Infirmary during the years 1899 to 1912 inclusive. These have been investigated from both the clinical and the pathological standpoint, but special attention has been paid on the one hand to the question of prognosis, and on the other to the minute anatomy of the growths. Much of the confusion which at present exists with regard to these tumours must be attributed to different observers employing the same words to denote different things. Thus from a study of the literature it is clear that by some authors the term myeloid sarcoma is used to indicate any form of sarcoma in which giant cells occur in large numbers, while by others it is restricted to the class which I am now describing. It will be well, therefore, at this point to define precisely the terms to be employed in the present communication.

Giant-cell sarcoma is used in its widest sense as a term to include all sarcomata in which giant cells of blastomatous origin constitute an important, it may be the essential, feature of the microscopic picture. This large class is made up of two groups of cases: (1) the *myeloid sarcomata*, myelomata of some authors; and (2) the *malignant giant-cell sarcomata*. Probably the bulk of the latter could be described alternatively as polymorphous cell sarcomas containing giant cells, especially as one can usually find cells of all sizes, from the smallest to the largest; but in a certain number of cases the giant cells are so abundant and so striking that the employment of a special term, malignant giant-cell sarcoma, seems not only warranted but desirable. In order to obtain data for comparison I have traced five examples of this latter type of growth, and the difference in the clinical history of the two groups of cases is rather remarkable. My reasons for preferring the term "myeloid sarcoma" to "myeloma" I shall refer to later.

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* A paper read at a meeting of the Leeds and West Riding Medico-Chirurgical Society.

Current views on myeloid sarcoma.—Before proceeding with the analysis of cases I propose to review briefly some of the more recent authoritative opinions on this subject. With regard to prognosis Bland-Sutton[1] states quite unequivocally, "Myelomata do not infect lymph glands nor disseminate"; and, again, "A close study of the myelomata indicates that they differ histologically, pathologically, and clinically from sarcomata, with which they have hitherto been grouped." In a discussion at the Royal Society of Medicine on myelomata and sarcomata of long bones in December, 1912, the same author says,[2] "No one will deny that the separation of myeloid tumours from sarcomas has been justified by experience, and many useful limbs have been saved in consequence." In America Bloodgood,[3] of Baltimore, is an ardent exponent of the same view; and he has from time to time adduced important evidence in support of the conservative treatment of such cases. In a paper read before the American Surgical Association last year he states: "Up to the present time we have no proof that the pure giant-cell sarcoma ever metastasises. It is a question, therefore, whether it should be called a sarcoma." Eve[4] thinks that the malignancy of myelomata is partly dependent on their situation—e.g., he says: "The broad general statement made in some text-books that the myelomata are only locally malignant requires ...... considerable modification. The myelomata of the femur, and especially those of the upper end of the humerus, are sometimes followed by metastasis. ...... The nearer the body the greater the malignancy would appear to be true of the myelomata as well as of the periosteal sarcomata." He adds, however, "I suspect that the old statistics have been made less favourable by the inclusion among myelomata of a certain number of round- and spindle-celled tumours containing a few multinucleated cells such as are present in many rapidly growing neoplasms."

While strongly in favour of the view that true myeloid sarcoma is only locally malignant, in which respect it is analogous to rodent ulcer, I see no reason why it should not occasionally undergo sarcomatous transformation, as happens in the case of other benign connective tissue growths. To continue the above analogy, it would be on all fours with the development of epithelioma in a rodent ulcer, a well-attested clinical and pathological fact. This is the view expressed by Adami,[5] who says, "It does not form metastases, save in the infrequent cases in which it undergoes sarcomatous modification." Sims Woodhead[6] regards the tumour as essentially a spindle-celled sarcoma from the outset, and thinks the giant cells owe their presence to a mere accident of position—viz., in relation to a bone.† He says also, "The typical form seldom gives rise to secondary growths, but secondary tumours when found in the position ordinarily affected contain no giant cells; they are simply small spindle-celled sarcomas." Mallory[7] goes yet farther and regards the giant cells merely as so many foreign body giant cells. Yet other authors hold that myeloid sarcoma may give rise to metastatic deposits having a structure identical with that of the primary growth, and in the discussion at the Royal Society of Medicine Maybury[8] referred to two recent cases which he regarded as supporting this view. In the first of these the primary growth was in the lower end of the femur, and the limb was amputated through the upper third of the thigh. Death took place nine months later. In the second case the primary growth was in the innominate bone, and the patient, who was too ill for operation, died a month after admission. In both cases secondary deposits were present in the lungs, their nature being determined post mortem by microscopic examination. Through the kindness of Dr. Leonard Dudgeon I have been enabled to examine the slide from the growth of the femur in the first of those cases, and in my opinion it is not a true myeloid but a malignant giant-cell sarcoma. This is borne out by the results of the microscopic examination of the lung nodules, undertaken by Mr. W. Gough, the patient having died in the North Ormesby Hospital, Middlesbrough. His report is as follows: "In section, the tumour is a mixed-cell sarcoma. Most of the cells are spindles, but some irregular, round, and giant forms are found." I have not seen the sections from the second case, but the microphotograph suggests a mixed-cell sarcoma with giant cells (malignant giant-cell sarcoma) rather than a true myeloid.

Analysis of Cases.

In every one of the 50 cases here recorded the diagnosis has been confirmed or made by microscopic examination of the tumour, and in 45 I have personally verified the pathologist's report. A systematic account of the gross morbid anatomy has been omitted, as only a very few of the actual specimens have been preserved.

Situation and frequency.—Of the 50 cases, 35 are from the jaws, 11 from the long bones, and 4 from other situations. This represents roughly an average of one long bone case and three jaw cases annually, since the total figures correspond to a period of 14 years. When one considers the number of surgical cases dealt with every year in the Leeds Infirmary, it is seen that the disease is relatively an uncommon one. The situation in 26 out of the 35 jaw cases is shown in the following: Upper jaw, 12; lower jaw, 13; both jaws, 1. The uniformity of incidence in the two jaws is remarkable. The latter case, which will be referred to later, is the only example in the whole series of a multiple lesion; in it there was one growth in the upper jaw and two in the lower.

The following shows the incidence in other bones: Femur, 6 (4 lower end and 2 upper end); humerus, 3 (2 lower end and 1 upper end); metacarpal, 3; tibia, upper end, 1; radius, upper end, 1; and coccyx, 1.

These figures are in rather striking contrast to Bland-Sutton's dictum, that the tibia is the favourite bone in the lower limb, the radius in the upper, but they are clearly far too few to warrant generalisations. In order to obtain data of greater significance I have added the 11 long bone cases of my series to 10 long bone cases collected by Gask[9] from St. Bartholomew's Hospital records—viz., those occurring during the ten years 1902 to 1911—and to 12 similar cases collected by Maybury[10] from St. Thomas's Hospital records—viz., those occurring during the 11 years 1901 to 1911. All these are cases which have been verified microscopically. The result is shown in the following: Femur, 19 (17 lower end and 2 upper end); tibia, 5 (all upper end); humerus,

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† A similar view is expressed by Hamilton, Text-book of Pathology, 1889.

4 (2 upper end and 2 lower end); radius, 4 (3 lower end and 1 upper end); and fibula, 1 (upper end).

It is a very striking fact that out of these 33 cases in more than half the disease was situated in the lower end of the femur; but the fallacy of generalising from a series such as this is well shown by comparing these figures with the cases reported by Bloodgood.[11] Here, in 10 cases out of 18, the tumour involved the lower end of the radius.

Age and sex incidence.—The age was ascertained in 49 cases, and the results may be shown in tabular form as follows:—

—	Long bones, &c.	Jaws.	All cases.
Under 10 years.	—	7	7
10–20 ,,	—	11	11
20–30 ,,	6	7	13
30–40 ,,	5	4	9
40–50 ,,	3		8
50–60 ,,	1	—	1

The table shows that myeloid sarcoma tends to occur at a somewhat later age in the long bones than in the jaws. In this series the average age at the time of operation was, in the former, 34 years, in the latter 20·6. Taking all cases together, we see that the disease occurs with singularly uniform frequency in each of the first five decades of life, and that above 50 it is exceedingly rare. If the two varieties be studied separately it is seen that in the case of the long bones the disease is most common between 20 and 40, while in the case of the jaws the greatest frequency is in the second decade. In the long bone cases the youngest patient was 21, the oldest 51; in the jaw cases, 5 and 50 respectively. Bland-Sutton states: "The patients are young, rarely above 25 years of age." In this series of 49 cases, 24 only were under that age, while of the 15 long bone, &c., cases, 2 only were under 25. The sex was ascertained in 48 cases, of whom 18 were males and 30 females. In the long bone cases there were 6 males and 9 females; in the jaw cases 12 males and 21 females.

Clinical course, treatment, and after-history.—In the first place I shall consider those cases, 15 in number, where the disease occurred in other bones than the jaws. Of these, 11 have been successfully traced. The duration of the disease at the date of the first admission was ascertained in 14 cases, 2 of whom gave a history of two and three years respectively, while the rest varied from one month to 15 months. The average for the series was 10½ months. Pain was the initial symptom in 6 cases, and in 5 of these it was subsequently followed by swelling. In 6 cases also swelling was the first clinical manifestation, and was followed by pain in two instances. In 2 cases pain and swelling appeared at the same time, while *functio laesa* was present in 3 cases only. In one case the patient was admitted with a spontaneous fracture at the site of growth. A history of injury was obtained in 6 cases, including one where there had been a spontaneous fracture at the site of the tumour three years before. In no case did the tumour attain a very large size, nor did fungation occur, save in one untreated case. Egg-shell crackling was elicited in one case, but only after the bone had been exposed at operation. In Case 13, where the upper end of the radius was involved, the lesion presented the naked-eye characters of a bone cyst, but on microscopic examination a narrow layer of typical myeloid tissue was found lining the bony wall. Case 1 was originally diagnosed and treated as a chronic synovitis of the knee. Radiographic examination was undertaken in 3 cases, and materially aided in the diagnosis.

From the point of view of treatment, many interesting and several highly satisfactory results were obtained. The cases may be divided into two categories—viz., those in which conservative measures were adopted in the first instance, and those in which amputation of the affected limb was carried out as soon as the diagnosis had been made. It may be stated at once that out of 11 cases traced 9 are alive and well at the present time, in 1 the disease has recurred, and 1 only is dead. The latter was a man, aged 49, with myeloid sarcoma of the upper end of the femur, who refused operation, and in whose case the diagnosis was established by exploratory incision and removal of a small portion of the growth. The patient lived for five years thereafter, the growth ultimately fungating in several places, but there was never any clinical evidence of metastasis. Seven cases were treated by local removal of the growth and 7 by immediate amputation; of the latter, the 4 cases traced are now alive and well. They include 2 femur cases treated by amputation through the thigh, and two humerus cases, one treated by interscapulo-thoracic amputation, the other by a mid-arm amputation. Of the 7 cases treated by local removal of the growth together with a greater or smaller margin of healthy bone, 3 were cured and 3 recurred; the seventh was not traced. Of the 3 which recurred one was cured by a subsequent local removal and one by amputation; the third has recurred at the time of writing. Inasmuch as the greatest interest and importance attaches to those cases in which conservative treatment was attempted, it will be instructive to consider them a little more fully.

Perhaps the most striking result in the whole series was that obtained in Case 7 by Mr. H. Littlewood. The tumour in this instance involved the upper end of the right femur, and had led to considerable expansion and thinning of the great trochanter. An incision was made over the latter, and a scraper forced through the expanded shell of bone. Masses of soft friable growth were thus removed, and the tumour was found to extend up the neck to the head and down the shaft as far as the lesser trochanter. There was no evidence of joint involvement. All the growth was scraped away until a hard, smooth wall was obtained, the cavity being packed with gauze. When the patient was dismissed five weeks later the wound was quite healed. Now, seven years later, the patient is alive and well, with a limb which is so sound and useful that he is able to follow laborious employment in an iron foundry. In Case 13 Mr. R. L. Knaggs, five years ago, resected the upper part of the left radius for a myeloid tumour, with completely satisfactory results. In Case 12 Mr. J. F. Dobson excised a myeloid sarcoma of the lower end of the humerus, together with a margin of healthy bone. The patient is now, 18 months later, alive and in good health, but has still some limitation of movement at the elbow-joint.

The following are brief notes of the three cases in which local removal was followed by recurrence. Case 9 is an interesting example of myeloid sarcoma of the coccyx, a condition to which I have been unable to find any reference in the literature

The patient, a married woman, aged 27, was first admitted under the care of Mr. E. Ward in March, 1907, complaining of a small tense tumour over the coccyx, first noticed some five months before. On rectal examination the mass was found to be much more extensive than appeared on the surface. At operation on April 12th the tumour was found to arise from the coccyx and to be infiltrating the surrounding tissues to a marked extent. The diseased parts were freely excised, and the patient was dismissed well on May 11th. In January, 1909, nearly two years later, the patient was admitted under the care of Mr. W. Thompson with recurrence *in situ*, and an extensive removal of the growth was again undertaken. The patient is now in excellent health, and since her second operation has given birth to two healthy children. In Case 11 the disease involved the upper end of the right tibia. On Sept. 30th, 1907, a skin flap was raised and the growth scraped away until hard bone was reached all round. Four months later the patient was admitted with recurrence in the old site, and a further attempt at local removal being rapidly followed by a further recurrence, the limb was amputated above the femoral condyles. In Case 6 the disease was situated in one of the metacarpal bones, which was excised. Now, nine years later, there is evidence of local recurrence, which first manifested itself about two years ago. The patient in the meantime refuses to have further operative treatment, so that histological proof of recurrence is lacking. It may be stated here that so far as it is possible to judge from the notes, all the long bone cases were of the endosteal type, while all the jaw cases, with one possible exception, were of subperiosteal origin.

I shall now refer very briefly to the jaw cases, 35 in number, 29 of which have been successfully traced. The duration of the disease was stated in 14 instances, and varied from two months to five years, the average being 16 months. The disease was attributed to trauma in 2 cases only; in Case 20 it was alleged to have followed a tooth extraction which had taken place six months previously, while in Case 39 the patient ascribed the onset to the irritation of an artificial denture. In every case where notes are available the tumour took origin from the alveolar border of the jaw, from which it usually projected as a small plum-coloured nodule. The method of treatment varied from removal with scissors or scraping away to complete excision of a portion of the lower jaw, which was performed in one instance. In the great bulk of the cases the small portion of alveolar margin from which the tumour arose was excised with the growth. Of the 29 cases traced recurrence took place in 4, and in 3 of those a cure was effected by subsequent local removal; the remaining case is dead. The latter was a boy aged 12, the subject of some obscure bone affection, who died two years after the removal of three myeloid sarcomata from his jaws. His case, which is one of very great interest, will be published in full by Mr. Lawford Knaggs, and I need only mention here that although there was local recurrence in the jaws he never presented any clinical evidence of metastasis. Indeed, for a year before death he was profoundly asthenic and bedridden. Microscopically all three jaw tumours presented the typical characters of myeloid sarcoma, and each appeared to be quite independent of the others.

The most striking feature, to my mind, of this series of myeloid sarcomata is that out of 40 cases traced 38 are alive at the time of writing, and in one only is there now recurrence. The patients have been under observation for periods varying from 1 to 14 years, and 31 out of the 40 cases traced are of over three years' standing. Of the 2 cases dead, 1 had refused operation and lived for five years thereafter, ultimately becoming bedridden with a fungating tumour of the thigh; the other, the case just described, died really from an independent affection. There is no evidence that dissemination took place in either case. In the light of these results the ultimate prognosis in cases of myeloid sarcoma, after efficient removal of the growth, can only be regarded as highly favourable.

Malignant Giant-cell Sarcoma.

While collecting the material on which the preceding analysis is based, I took the opportunity of examining the microscopic specimens from all cases of sarcoma of bone investigated in the pathological department of the Leeds General Infirmary during the period under review. From amongst these I have collected five examples of malignant giant-cell sarcoma, to which I have added a sixth examined in private some two years ago. One of the cases has not been traced, and is consequently useless for purposes of comparison from the clinical standpoint. In the other 5 the situation of the growth was as follows: tibia, upper end, 2; femur, lower end, 2; and jaw, 1. All four lower limb cases were treated by amputation through the upper part of the thigh; the jaw case, having been diagnosed as a "myeloma," was treated by local excision. The histological characters, which contrast markedly with the myeloid series, will be referred to later.

The after-history is very striking. In every one of those 5 cases the disease proved fatal in from six months to three years from the time of operation, and in each of the four long-bone cases there is a clear history of lung metastasis. Post-mortem verification of this, however, was obtained in one instance only. None of the cases had recurrence *in situ*. In the jaw case I have been unable to obtain an accurate account of the final illness. It is to be noted that four of those cases were determined to be examples of malignant giant-cell sarcoma from the microscopic appearances only, and before the after-history had been ascertained. In the fifth I had occasion to examine only the secondary lung deposits, but by the kindness of Professor Eurich I have been able to examine also the slide of the primary growth. It is thus seen that from the clinical standpoint the contrast to the myeloid series is most marked, showing how very important it is to be able to say, from the microscopic characters, whether a given growth is a true myeloid sarcoma or not.

Histopathology.

The distinctive feature of a myeloid sarcoma is its giant cells. These vary greatly in number in different cases and in different parts of the same tumour, but, except for their apparent variability in size and in number of nuclei, they are remarkably constant in their morphological characters. The "matrix" of the tumour, on the other hand (if one may be allowed to use the term), shows great variation in different cases. It may be exceedingly fibrous or very cellular, and it may be spindle celled, round celled, or mixed celled. As a rule, the more rapidly growing myeloids have a round- or mixed-celled matrix, while the more slowly growing are spindle celled. The former also are richly cellular, while the latter tend to be increasingly fibrous. The relative proportion of giant cells and stroma is determined chiefly by the situation of the tumour, but also bears some relation to the rate of growth. Periosteal myeloids, which arise usually if not invariably from the alveolar margin of the jaws, are characterised in most instances by an abundant spindle-celled or fibrous matrix with relatively few giant cells, while the soft, maroon-coloured, endosteal myeloids of the long bones have numerous giant cells, and a much less abundant stroma. As a rule, also, the more rapidly growing tumours contain an abundance of giant cells irrespective of their site of origin, and they are traversed by numerous thin-walled capillary blood-vessels, often of considerable size. These differences in the minute anatomy explain the different appearances found naked eye—namely, the firmness and small size of the great majority of jaw myeloids, and the softness and proneness to degenerations and hæmorrhages in the rapidly growing endosteal myeloids of the long bones. In jaw myeloids especially the essential tissue of the tumour is frequently broken up into small masses by broad bands of fibrous tissue, and these, as well as the matrix generally, are often the seat of large deposits of golden-yellow pigment, probably a derivative of effused blood. In the deeper portions of jaw myeloids small bony spicules are often present, more or less closely connected with the subjacent bone. In jaw cases also, when the growth attains a certain size, the epithelial and periosteal coverings disappear and their place is taken by a narrow granulation-tissue zone, the surface layer of which is usually necrotic.

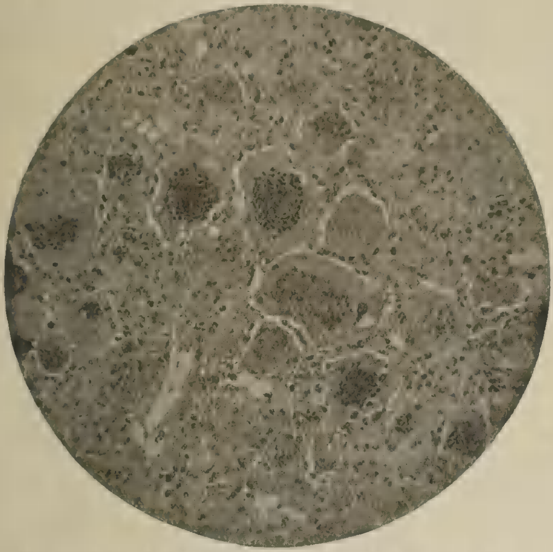
The giant cells of myeloid sarcoma (Fig. 1 and Fig. 3, A) closely resemble the osteoblasts and osteoclasts of normal bone, but they frequently attain a very much larger size and may exhibit a whorled arrangement of the nuclei which, I believe, is characteristic. They do not resemble the myeloplaxes or mononuclear giant cells of the bone marrow, as stated by some authors. The cytoplasm is usually abundant, especially at the periphery, and presents a homogeneous ground-glass appearance. Vacuoles, mostly peripherally situated, are often present and may be of large size, when they not infrequently contain cell inclusions. The nuclei are uniformly small in size, and where not closely packed together are round or oval in shape. They stain intensely with the basic dye and usually contain a single nucleolus. After careful search I have been unable to determine the occurrence of mitotic nuclear division within the giant cells, even where mitotic figures were present in abundance in the cells of the matrix. The number of nuclei, and consequently the size of the cell, varies immensely in different cases. In most periosteal jaw myeloids the giant cells are comparatively small in size, and contain, in a given section, from 12 to 40 nuclei. In endosteal myeloids, on the other hand, they are larger on an average, and may attain a very great size. In cells of the latter class I have frequently counted upwards of 200 nuclei in a single section. In the smaller giant cells, and in many of the larger, the nuclei are uniformly distributed throughout the cytoplasm, but in certain of the latter they are grouped in the centre, and many exhibit the whorled arrangement already referred to. It is when the nuclei are thus packed tightly together that they lose their usual round or oval shape and become irregularly polygonal from mutual pressure. The peripheral ring-like distribution of nuclei so characteristic of tuberculous giant cells is practically unknown in cases of myeloid sarcoma. A point to which I wish to draw special attention is that there are no transitional forms between the giant cells and the other cellular constituents of the growth; all cells can be relegated with certainty to one class or the other.

It will be convenient now to contrast with these the histological characters of malignant giant-cell sarcoma. The stroma, as in the case of myeloid sarcoma, may be round, spindle, or mixed celled, and, as in it, the number of giant cells varies greatly in different cases and in different parts of the same growth. The cells of the stroma are much more irregular as a rule, and it is always possible to find transition forms from the smallest to the largest. A striking feature is the large size and irregular shape of many of the nuclei. Mitotic figures, many of them irregular, occur with great frequency both in the giant cells and in the cells of the matrix. As these are not infrequently cases of chondrosarcoma and osteosarcoma, cartilaginous or bony islets may be met with, in the secondary deposits as well as in the primary growth. It is the giant cells, however, and especially their nuclei, which constitute the chief distinguishing feature of this group. (Fig. 2 and Fig. 3, B, C, D, and E.) Here the nuclei are extremely irregular in size and shape, often presenting lobes and indentations, while most of them are of large size. Not infrequently nuclei of enormous size are met with, and in such cases the giant cell may be mononuclear. The number of nuclei seldom exceeds 6, and most of the cells possess from 1 to 4 only. They usually lie clumped together in the cell, so that often it is difficult to determine precisely how many are present. Mitosis within the giant cells is of common occurrence, and very frequently this is of the multipolar type, an event which may in itself account for the presence of multiple or multi-lobed nuclei in these cases. It is to be noted that mononuclear giant cells and mitosis of giant-cell nuclei, common in the malignant type, do not occur in myeloid sarcoma, while vacuolation of the cytoplasm, common in the latter, is rarely seen in the other variety.

A word must be said as to the occasional occurrence in small numbers of osteoclast-like giant cells in cases of malignant giant-cell sarcoma. These probably originate in the adjacent abnormally stimulated bone, and are of no special significance. That the giant cells of myeloid sarcoma are neoplastic there can, I think, be little doubt. Mallory[12] has recently advanced the view that they are of the nature of foreign body giant cells, in which category he places also the osteoclasts themselves. To such a view many serious objections may be brought forward. While osteoclasts may possess, in part, some of the functions of foreign body giant cells, they are at the same time essential constituents of normal bone, and it is still a moot point whether the same cells may not become, under certain conditions, bone-builders instead of bone-destroyers. I would therefore lend my support to the view expressed by Adami [‡] that the giant cells of myeloid sarcoma are to be regarded as specific constituents of the tumour and not as a mere accidental feature dependent on the situation of the growth. If they are foreign body giant cells how are we to account for their presence in such large numbers in the case of myeloid sarcoma, and their fewness or actual absence in other sarcomas of bone? There is this other point, that irritation or foreign body giant cells, when these occur in response to known stimuli, have a definitely focal arrangement, even where they are present in very large numbers, therein differing markedly from the giant cells of myeloid sarcoma. Finally, there is the central whorled arrangement of nuclei already mentioned, an appearance which, so far as I am aware, is quite unknown in the case of foreign body giant cells.

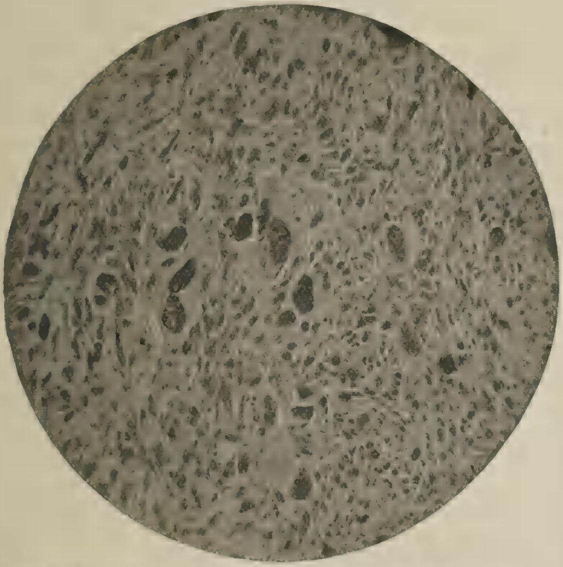
[‡] Adami advances arguments against Mallory's contentions in a footnote to his article on Myelomas. Text-book of Pathology, vol. i., p. 734.

FIG. 1.



Microphotograph of a typical endosteal myeloid sarcoma. The whorled arrangement and uniform character of the giant-cell nuclei, and the vacuolation of the cytoplasm are well shown. (From Case 15. $\frac{1}{4}$ inch objective, without ocular.)

FIG. 2.



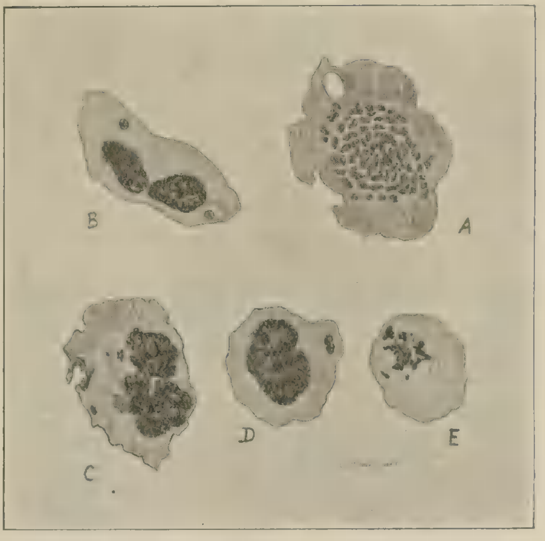
Microphotograph of a malignant giant-cell sarcoma from the lower end of the femur. The nuclei of the giant cells are large, irregular, and few in number. ($\frac{1}{4}$ inch objective, without ocular.)

Myeloid Tumours of Tendon-sheaths.

This is a rare condition to which French writers especially have drawn attention. In these tumours, which arise chiefly from the synovial sheaths of the flexor tendons of the hand, typical myeloid giant cells are present in considerable numbers, and yet, as a rule, there is no evidence of any bony connexion. The bulk of the tumour is made up of round and spindle cells with a good deal of fibrous tissue, but in some cases at least the structure is markedly alveolar, the tumour cells are polygonal, and the whole appearance suggests endothelioma. This is the view taken by Bellamy,[13] who regards the giant cells as formed by the fusion of the smaller (endothelial) cells of the growth, and suggests the use of the term "myeloid endothelioma." My own experience is limited to a single example, but as this did not occur in a hospital patient it has been omitted from the present series.

Throughout this paper the term "myeloid sarcoma" has been employed in preference to the more modern "myeloma," for the reason that I still regard the tumour as essentially embryonic in structure, whether it be looked upon as arising from bone or from bone marrow. In the more slowly growing members of the group there is certainly considerable formation of fibrous tissue, but the same is true of many other sarcomata (fibro-sarcomata). The tumours, moreover, exhibit undoubted evidence of local malignancy, as shown by their power of erosion and by their lack of definition at the periphery. I have already compared them to rodent ulcer, among epithelial growths, in respect of many of their clinical characters, and this is an analogy which might profitably be borne in mind by the surgeon.

FIG. 3.



A, A typical myeloid giant cell. The nuclei are numerous, small and regular; they are centrally situated and exhibit a whorled arrangement. B, C, D, E, Giant cells from four of the cases of malignant giant-cell sarcoma mentioned in the text. The nuclei in B, C, and D are large, irregular, and few in number; in E there is a multipolar mitotic figure. These five cells measure approximately 123μ, 116μ, 108μ, 79μ, and 69μ respectively in long diameter. (Drawing by Miss E. M. Wright.)

Summary of Conclusions.

Myeloid sarcoma is locally malignant only and does not undergo dissemination. It is to be clearly distinguished, both clinically and pathologically, from malignant giant-cell sarcoma, in which death with visceral dissemination is the rule, even after the most radical operative treatment. The histological diagnosis is based on the morphological characters of the giant cells, especially as regards their nuclei. In myeloid sarcoma the latter are numerous, uniform, small, and without mitoses; in malignant giant-cell sarcoma they are few, sometimes single, irregular, and often very large, while mitotic figures are frequent. After investigating this comparatively large series of cases, and from a study of the literature, I feel bound to advance a strong plea for the conservative treatment of myeloid sarcoma. Especially would I advocate thorough curettage as the operation of choice in the first instance in suitable cases; failing this, a local resection of the growth. Amputation should be the last resort, and only after the failure of less radical measures. An accurate histological investigation of the tumour is in all cases essential.

I wish to express my great indebtedness to the honorary surgical staff of the Leeds General Infirmary for their kind permission to make full use of their cases.

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Leeds.

HEART-BLOCK IN ACUTE RHEUMATIC CARDITIS.

BY A. E. NAISH, M.A., M.B. CANTAB., M.R.C.P. LOND., M.R.C.S. ENG.,
SENIOR ASSISTANT PHYSICIAN, SHEFFIELD ROYAL HOSPITAL;
AND
ALEX. MILLS KENNEDY, M.D. GLASG.,
ASSISTANT TO THE MUIRHEAD PROFESSOR OF MEDICINE, UNIVERSITY OF GLASGOW; DISPENSARY PHYSICIAN (LATE ASSISTANT PATHOLOGIST), GLASGOW ROYAL INFIRMARY; PATHOLOGIST TO THE GLASGOW MATERNITY AND WOMEN'S HOSPITAL.

THE occurrence of heart-block in acute disease is now well recognised. It is known to occur in influenza, typhoid fever, pneumonia, diphtheria, rheumatic fever, and ulcerative endocarditis, but hitherto comparatively few post-mortem reports on such cases have been published.

In 1908 Jellinek and Cooper[1] reported a case of complete heart-block in acute gonorrhœal endocarditis dependent upon an acute necrosis of the interventricular septum; in another case of ulcerative endocarditis (James[2]) an ulcer of the interventricular septum immediately beneath and posterior to the membranous septum was the cause of the block; in Gerhardt's case[3] of rheumatic fever, followed quickly by enteric fever, inflammatory lesions were found in the a.-v. bundle. In 1910 one of us (A. M. K.[4]) recorded the presence of acute inflammatory cellular lesions in the a.-v. bundle in a case of acute endocarditis with partial heart-block, and a case of complete heart-block in diphtheria[5] in which acute inflammatory cellular lesions involved the a.-v. node and bundle; and in the same year Magnus Alsleben[6] reported a case of heart-block in diphtheria dependent upon a severe parenchymatous degeneration of the a.-v. bundle. A year later Butterfield[7] recorded a case of acute carditis with partial heart-block existing for 11 days before death. In this case there was a widely diffused inflammatory cellular infiltration of the "rheumatic" type in the heart, conspicuous in the region of the central fibrous body, and the inflammation reached its greatest intensity in the a.-v. node. Cellular inflammatory infiltrations, mostly lymphocytes, were also present surrounding the vessels in the bundle.

In reviewing the cases of heart-block it is necessary to note some negative cases—cases without bundle lesions—that have been recorded. In 1907 Fahr[8] recorded a case in which no lesion was found in the part of the node and bundle examined, but this did not include an examination of the main stem of the bundle at its bifurcation nor of its two principal branches. In 1910 Krumbhaar[9] published a case of block in which there was a diffuse fibrotic change in the ventricular muscle, with atrophy of the neighbouring muscle fibres. There was fibrosis in the s.-a. node, but the a.-v. bundle and its branches appeared to be quite normal with the exception of an occasional increase of connective tissue. In Price and McKenzie's case[10] there was extreme degeneration and cellular infiltration of the cardiac muscle, occurring in foci but not involving the s.-a. node or bundle. The fibres of the a.-v. node had a vacuolated appearance suggestive of fatty degeneration, although they did not think it possible to say. The patient was a child suffering from diphtheria, and the heart-block was associated with auricular fibrillation. In Hume's case[11] the heart-block was also associated with auricular fibrillation, and although no lesion was found in the nodes or bundle the terminations of the branches amongst the ventricular muscle fibres appeared to be degenerated.

The two cases of heart-block which we now report occurred in the course of acute rheumatic carditis in children, and were associated with similar histological changes in the cardiac musculature, but unfortunately in only one was the junctional tissue examined microscopically.

CASE 1.—The patient, aged 16, was admitted to the Sheffield Royal Hospital on August 12th, 1913, under the care of Dr. Arthur J. Hall (to whom our thanks are due for permission to report this case).

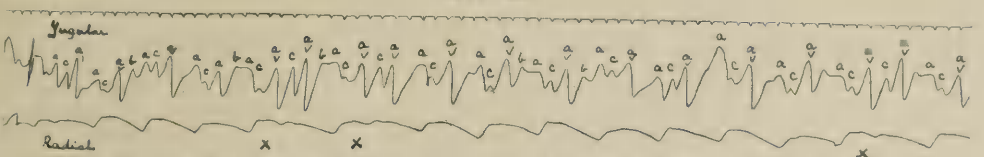
Present illness.—About seven or eight weeks before admission the patient had had what was thought to be an ordinary cold, accompanied by swelling and pain in the right side of the face. For the next two or three weeks she was ailing slightly, the cold coming and going. Five weeks before admission pains had commenced in the limbs and a rash had appeared, consisting of bright red patches covering most of the limbs and trunk. The rash rapidly faded on the following day, but the pains continued, being at first mainly in the legs and subsequently in the arms, and tending to wander from place to place. They varied in intensity from time to time, reaching their maximum about two weeks after the commencement, when they were very severe; during the last two weeks they had largely subsided. Dyspnœa and other symptoms of heart failure had set in and had become progressively worse during the last four weeks before admission, and for the last two weeks there had been some cough and bronchial trouble.

Previous history.—Up to the commencement of this illness the patient had been in good health with the exception of rather frequent colds. She had never suffered from rheumatism, and her heart was thought to be sound. One year previously she had been quite prostrate after an injection of cocaine for a dental extraction, but she was not examined by a medical man on this occasion.

Family history.—The patient's father had suffered from rheumatic fever at the age of 33, but this had not been followed by any heart trouble. Her elder sister had also had severe rheumatism when 16 years old, but had escaped without involvement of the heart.

On admission the patient appeared very pale and ill. There was very considerable dyspnœa and orthopnœa, but only very slight cyanosis. The pulse was irregular, the irregularity appearing to be due to a mixture of a fast rate of about 126 beats per minute and a slow one of about 63. The apex beat was felt in the fifth intercostal space 5 inches to the left of the mid-sternal line. The cardiac dulness extended 2 inches to the right of the mid-sternal line, and on the left was lost in the dulness present at the base of the left lung. A soft blowing murmur was heard at the apex and outwards as far as the middle of the axilla. The sounds over the rest of the heart were faint, and there was but little relative accentuation of the second sound at the pulmonary area. There was no pericardial friction heard. The irregularity of the heart corresponded exactly to that of the pulse. There was some dulness at the bases of both lungs with numerous râles and rhonchi. On the left side these signs were more marked and were accompanied by bronchial breathing. The liver was not felt to be enlarged, and there was no ascites or œdema of the lower limbs. The temperature was 101° F., and the respirations were 48 per minute.

FIG. 1.



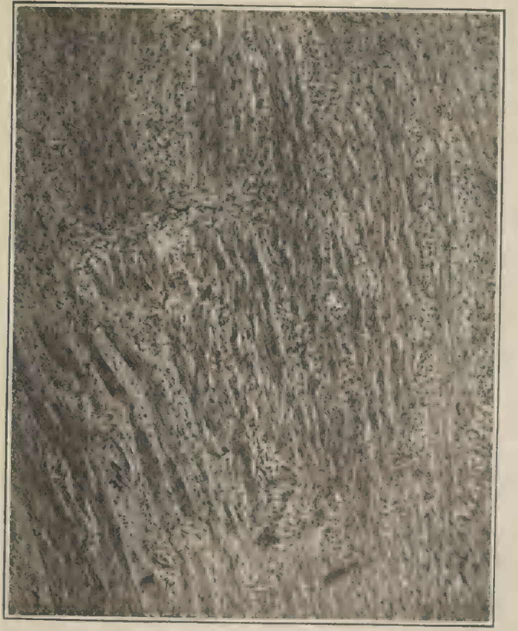
Polygraph tracing from Case 1, showing for the most part 2 : 1 rhythm, with a few beats of 1 : 1 (marked x).

Course of disease.—During the next two weeks the patient gradually became more comfortable, and was able to lie a little lower in the bed. The temperature gradually fell, and between August 18th and 26th did not rise above 99·4°. The respirations became rather less frequent, being more usually below than above 40 per minute. The physical signs in the chest remained almost *in statu quo*, except that the dulness at the base of the right lung diminished. The irregularity of the heart persisted, on some days the quick rate being more in evidence, and on others the slow, but without any definite progression towards a greater or less degree of block. On August 26th the temperature rose to 100°, and for the next three days the patient was not quite so well, the dulness and bronchial breathing at the base of the left lung increasing and the respirations becoming a little more frequent. Towards the evening of August 30th she became much worse, and from then to her death, on Sept. 1st, the dyspnœa was very severe, and she became gradually unconscious. The temperature at this time varied between 101° and normal. The heart irregularity remained as before.

Polygraph tracings.—Although not easy to obtain owing to the severe dyspnœa, these tracings showed clearly enough a condition of partial heart-block, the ventricle sometimes responding to every auricular impulse with a prolonged a.-c. interval, but more usually responding only to every second auricular impulse. (Fig. 1.)

Post-mortem appearances (A. M. K.).—Permission was obtained to make a post-mortem examination of the heart only. There was a diffuse fibrinous pericarditis all over the heart, both visceral and parietal layers of pericardium showing a typical "bread-and-butter" appearance. The two layers of the pericardium also appeared chronically thickened from fibrosis. Over a considerable proportion of the heart's surface the two layers were adherent. There were small endocarditic vegetations along the lines of contact of the mitral valve, and the basal portions of its cusps showed chronic thickening, but there was no gross narrowing of the valvular orifice. Similar vegetations were present on the aortic cusps, and there was some hypertrophy of the right ventricle, but nothing else of note visible to the naked eye. A block of tissue was removed from the cardiac septum, which contained the pars membranacea septi, the adjacent portions of the auricular and ventricular muscular septa, the central fibrous body, and the attachments of the anterior cusp of the mitral valve. The block extended sufficiently far back to include the mouth of the coronary sinus, and it was cut out in such a manner that its long antero-posterior diameter was at right angles to the long axis of the heart. Such a block includes the whole of the a.-v. node and the main stem of the a.-v. bundle, with a portion of its two principal branches. It was cut in serial section from above downwards in the horizontal plane, and a series at intervals of five were mounted and stained with hæmalum and van Gieson's stain. Examination of the sections showed excessive fibrosis spreading from the base of the mitral valve inwards and downwards to the membranous septum, and causing distinct thickening around the a.-v. bundle. In a similar way the central fibrous body was considerably thickened, and the fibrosis extended across to the base of the tricuspid valve, but not on to the valve segments. This fibrosis was infiltrated with inflammatory cells, polymorphonuclear leucocytes and round cells to a marked extent, the infiltration being most intense in its deeper parts and extending upwards into the mitral cusp. In the fibrosis below the tricuspid valve and in the neighbourhood, in addition to the above-named inflammatory cells, there were numerous "giant cells" of the so-called "rheumatic" type. In the a.-v. bundle there was extreme swelling of all the connective tissue between the bundle fibres. The swelling was caused by inflammatory œdema, and the tissue showed well-marked infiltration with inflammatory cells, both polymorphonuclear leucocytes in abundance and round cells. Focal collections of inflammatory cells were also present in the bundle, and its margins were infiltrated with similar cells in great numbers. Similar inflammatory cellular foci were present in the node, and the connective tissue between the nodal fibres exhibited the same kind of œdematous swelling. The fibrous tissue around the arterioles in the node appeared rather excessive in amount and was also swollen. The inflammatory infiltration and swelling of the interstitial tissue were most marked in the main stem of the bundle. (Fig. 2.) In the cardiac

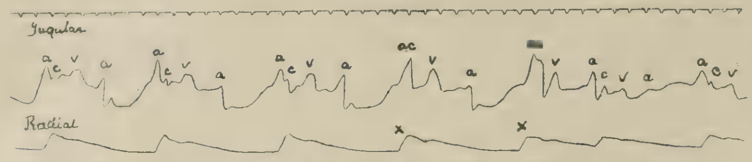
FIG. 2.



From a photomicrograph of main stem of a.-v. bundle, × 90, showing the "bundle" fibres widely separated by the extremely swollen, œdematous interstitial connective tissue, which is abundantly infiltrated with polymorphonuclear leucocytes.

tissue generally many of the arterioles showed periarterial fibrosis, the fibrous tissue being swollen, arranged in whorls, and showing slight infiltration with inflammatory cells. Inflammatory nodules consisting chiefly of round cells and "giant cells" in small areas of swollen interstitial connective tissue were also present, although they were seen but rarely.

FIG. 3.



Polygraph tracing from Case 2, showing 2:1 rhythm, with a single beat of 1:1. The a.-c. interval becomes progressively shorter up to this beat, and it is questionable whether the beats marked x are not ventricular escapes.

Acute inflammatory cellular infiltration was also seen spreading along in the subendocardial tissue, but only becoming marked as it approached the base of the mitral valve.

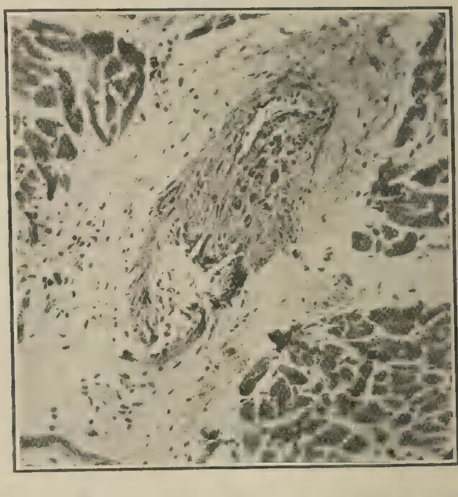
The acute inflammatory condition present in the a.-v. node and bundle in this case, and which seemed sufficient to account for the heart-block, is exactly comparable to the lesions present in the case of heart-block in diphtheria which has been previously published by one of us (A. M. K.[5]). In this latter case acute inflammatory lesions, cellular infiltrations and swelling of the interstitial tissue, involved the a.-v. node and bundle and were associated with a complete block of at least three days' duration. The type of cellular reaction also corresponds to that in Butterfield's case of partial block already quoted.[7]

CASE 2.—This patient first came under the care of one of us (A. E. N.) in September, 1909, when he was 8 years old. The history obtained was to the effect that he had been quite well up to the beginning of that year, with the exception of two attacks of pneumonia some years previously. From April to July, 1909, he had been an in-patient at King's College Hospital, under the care of Professor G. F. Still, with St. Vitus's dance and heart disease. Since then he had been in fair health and had not suffered from shortness of breath. On examination he appeared to be fairly well nourished and of good colour, and there was no dyspnœa after the ordinary exertions of walking and undressing. There was no œdema or ascites. Examination of the heart showed the apex beat in the fifth space, 5 inches from the mid-sternal line. There was a well-marked heave over the apex and also over the præcordium nearer to the sternum. The cardiac dulness extended from 1½ inches to the right to 5¾ inches to the left of the mid-sternal line. On auscultation there was a loud systolic bruit heard at the aortic base and conducted up to the neck; at the third and fourth left interspaces close to the sternum a systolic and a faint whiffing diastolic bruit were heard; at the apex there was a long blowing systolic murmur conducted outwards and round to the back and a short rumbling diastolic. Nothing abnormal was detected in the lungs. The patient attended the hospital on and off at irregular intervals as an out-patient up to the time of his admission to the wards on Dec. 27th, 1912, remaining in fair health with the exception of an occasional cough and one brief attack of mild rheumatism in March, 1910. A few days before admission he had begun to vomit and felt ill.

On admission the patient looked pale and seemed rather ill. There was some ascites and œdema of the lower limbs. The liver was felt 1 inch below the costal margin in the right nipple line. There was some dulness at the bases of both lungs, more marked on the right side, and numerous crepitations were heard. The breathing was not much distressed, but the patient was unable to lie flat; the respirations were 32 per minute and the temperature was 100·2° F. Examination of the heart showed, in addition to what is noted above, some signs of an increase of the hypertrophy and the presence of pericardial friction in the third and fourth interspaces on the left. The heart-rate was 92 per minute, and the rhythm was perfectly regular. For the next two days the pulse remained regular at a rate between 80 and 90 per minute, and then suddenly fell to about 50 per minute and became markedly irregular. Polygraph tracings showed that this irregularity was due to a mixture of 2:1 and 1:1 rhythms complicated occasionally by the presence of premature beats. (Fig. 3.)

Post-mortem examination showed the left pleural cavity to be wholly obliterated by adhesions which could just be broken down, and the right similarly affected except at the base where there was a large pleural effusion of clear fluid. Both lungs were œdematous. There was a considerable quantity of fluid in the peritoneal cavity. The spleen was firm and weighed 4½ oz. The liver weighed 2 lb. 13 oz., and was fibrous and congested. The pericardium was bound externally by recent adhesions; between the two layers there were a little fluid, much fibrin, and a few recent adhesions. The heart weighed 17 oz. The walls of all the cavities were hypertrophied, but more especially that of the left ventricle, measuring on an average about 2½ cm. in thickness. The ring of the mitral valve was thickened, rigid, and somewhat contracted; the valve segments were also thickened and contracted. The aortic valves, too, were markedly thickened. No recent vegetations were apparent. Blocks of tissue from the right and left ventricles and the interventricular septum were cut. They showed more or less wide separation of the muscular fibres by swollen interstitial tissue containing numerous small round cells. Around and near the arterioles there were, especially in the left ventricle, numerous so-called "rheumatic nodules" consisting of round cells and giant cells in swollen interstitial tissue. (Fig. 4.) In places there was marked degeneration of the arteriole wall, which appeared of a structureless homogeneous nature.

FIG. 4.



From a photomicrograph of wall of left ventricle, showing a small artery with a "nodule" in its wall.

We regret that we are unable to give an account of the condition of the a.-v. node and bundle, and to this extent the report is incomplete. No microscopical examination of the junctional tissue was made at the time and the specimen was not kept. We include the case in this paper because the inflammatory changes in the cardiac musculature showed similar characteristics to those in the first case—"rheumatic" type—and it seems possible that similar changes may have been present in the node and bundle, but to what extent we are unable to say.

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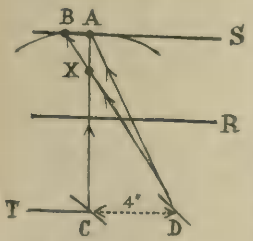
ON THE LOCALISATION OF BULLETS AND SHRAPNEL.

BY WALKER OVEREND, M.A., M.D. OXON.,
HIEF ASSISTANT IN THE X RAY DEPARTMENT AT ST. BARTHOLOMEW'S HOSPITAL, AND HONORARY RADIOLOGIST TO THE EAST SUSSEX HOSPITAL, HASTINGS.

AT the present time, when it is the frequent duty of every radiologist to locate the position of bullets and fragments of shrapnel-casing in the chest, pelvis, in the muscles of the back, shoulders, and other regions, the necessity of reliable and expeditious methods is obvious.

The methods here described depend on the well-known fact of the displacement of the shadow when the target or anticathode is moved out of the direct line. In the figure X is a foreign body situated, for example, in the muscles of the back, the patient lying face downwards. The diaphragm, rectangular by preference, being contracted to a mere slit, the tube is moved until the shadow lies exactly central. The point of a pencil is placed on the centre of the shadow if the object is irregular in shape; if a pointed bullet either on the apex or opposite end. The light is then turned up and the spot is marked on the glass of the screen with a small dot of ink or with a solid ink pencil. The diaphragm is now opened and the target (T) moved to D, 4 inches to the right. The shadow is displaced to the point B; its position is again marked on the screen. As the distance of the target below the edge of the table is known, or may be ascertained once for all, it now only remains to measure the height of the screen (S) above the couch (R), when the distance of the anticathode from the screen or skin is found.



The data we have now obtained are the amount of displacement of the shadow corresponding to a 4-in. movement of the target and the distance of the shadow from the target. To facilitate matters a 4-in. steel rule may be purchased in which the inches are divided into 32 parts. For immediate calculation a table may be consulted consisting of several columns. In the first column the depth of the body in inches is given, in the remainder the displacements of the shadow in 1/32nds of an inch, for 18, 20, up to 30 inches distance of the screen from the anode. The distance between the shadows is measured on the 4-in. scale in 1/32nds of an inch, the column corresponding to the height of the screen is taken with the degree of displacement. This line is followed to the left to the first column and the depth of the object is ascertained.

Before commencing the localisation it is important to see that the tube itself is properly centred. This may be done by placing a circular metallic reel—such as is generally used for surgical plaster—on the couch and the fluorescent screen over it. The position of the tube is now altered in its box until the shadow of the reel corresponds to the reel itself. Before the patient leaves the couch it is necessary to indicate on the skin as a landmark the position of the shadow cast by the direct ray. This may be done by moving a long thin pointed metallic rod beneath the screen until the shadow of the point corresponds with that of the foreign body. Indelible pencil or solid silver nitrate may be used. The whole procedure of localisation need not occupy more than ten minutes.

If the shadow is too small, indefinite, or if very accurate estimation is required two radiograms may be taken on the same plate with the anode in the two positions already described. The measurement is then made between identical points of the shadows in 1/32nds of an inch. The brighter and more definite shadow is that cast by the direct ray. This method may be employed for bullets within the chest, abdomen, large joints, and skull. If the shadow moves with respiration, the *double* radiogram must obviously be taken in the same phase each time.

I have devised a simple localiser which may be employed when the distance between the shadows has been ascertained. It is clamped to the side of the couch directly the two shadows have been marked, and consists of a vertical rod, which carries in a sleeve a horizontal aluminium bar. At the extremity of the bar a *pellet of shot* is fixed. The bar is movable up and down on the vertical rod, also backwards and forwards in its sleeve. Fastened to the rod is an inch-scale and an indicator which at first is situated at zero. Before the patient leaves, the horizontal bar is projected over the screen, and lowered so as to touch it; then it is withdrawn and fixed. This position denotes the height of the screen. After the patient has gone the screen is again placed at the same level and the pellet of shot is brought exactly beneath one of the shadows. The tube and diaphragm are adjusted until the central ray strikes this shadow; the diaphragm is opened, and the tube moved four inches in a direction opposite to the second shadow. The shadow of the shot does not change its position, since it is situated exactly at the screen (see figure). The scale is now fixed, and the shot with the bar slowly depressed. Its shadow moves towards the second; when it is at the same level the bar is clamped and the depth is read on the scale.

In the upper arm, thigh, and calf it is not always easy to find the bullet even after crosses have been made at right angles to each other. The safest plan, perhaps, is to place the limb, with the assistance of the surgeon, in the *exact* position in which the operation will be performed, and localise the depth in the manner mentioned above, either by marking the two shadows on the screen or by taking a *double* radiogram. If the aperture of entry is near the shadow a tiny piece of adhesive lead foil as an additional landmark may be placed over it before the single or double radiogram is taken.

The localiser, calculating tables, and rule may be obtained from Mr. Leslie Miller, 66, Hatton-garden, London, E.C.

St. Leonards-on-Sea.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF RUPTURED UTERUS WITH INTACT MEMBRANES.

By LEWIS GRAHAM, M.S. LOND., F.R.C.S. ENG.,
HONORARY SURGEON, BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN; HONORARY OBSTETRIC REGISTRAR, MATERNITY HOSPITAL, BIRMINGHAM.

THE following rare case will, I think, prove of interest to the readers of THE LANCET.

The patient, aged 34 years and in her fourteenth pregnancy at full term, was admitted to the Birmingham Maternity Hospital at 3 A.M. on August 14th, 1914. Her previous labours had been normal. She had been in an infirmary during the last week of June this year on account of abdominal pain and vomiting, and while there was given an anæsthetic for thorough abdominal examination, but as nothing was found she left.

When admitted to the Maternity Hospital the patient stated that she had "had a flooding which went through the bed." On examination nothing abnormal was found except slight cystitis. The os admitted a finger. The head presented and the fœtus was alive. At 9 A.M. she complained of "stomach ache, not like labour pains." At 12.30 she had the same pain and the os was now the size of a five-shilling piece. At 3.30 she complained of a "click in the right side." She also began to lose more than normal. Her appearance changed and she looked grey and pinched. The pulse was 88. The fœtal heart was not heard. The abdomen looked more square and full; it was quite soft and slightly tender. The membranes had not ruptured and the fœtal head could not be felt. At 5 P.M. I saw the patient. She was having no pains, but her condition was so grave that I ruptured the membranes, seized a foot, and extracted a dead but otherwise normal child with ease. Immediately on delivery the woman's condition, bad before, became much worse. I then examined again and felt a long anterior rupture of the uterus with the placenta lying in front. The latter I withdrew. The woman now appeared to me to be dying. She had no pulse at the wrist and her respirations were only the faintest occasional sighs. I put into the vagina a large plug of iodoform gauze and expected her to expire in a few minutes.

While I was getting ready to return home the house surgeon, Dr. Elsie Impey, begged hard that I should do something more for the woman, and with great courage volunteered to give an anæsthetic. It seemed that the patient would die in any case, but that if we operated we should feel that nothing had been left undone to save her. Without the slightest hope of success, under a little open ether, I performed a subtotal hysterectomy. The uterus was severed below the level of the rent, which extended vertically, in front, from the fundus to about the position of the internal os. The gauze was pushed out through the vagina and another piece introduced from above, vessels were ligated and all stumps peritonealised with a continuous suture. All blood in the abdominal cavity was extracted and saline was left in the abdomen. Throughout the operation, which took about 20 minutes, the best one can say of the patient's condition was that she did not die. When the strain stitches were put into the abdominal wall she appeared to have expired, so no intervening skin stitches were put in, and she was just covered with dressing and a binder. Luckily the patient was not dead, and at 10 P.M. her condition was much improved. She was conscious, and had a pulse of 150. For five days she made perfect progress, and one anticipated recovery. On August 19th she had diarrhœa, which was complicated next day by vomiting. Despite all treatment these continued, and she went downhill and died at 1 A.M. on August 22nd.

At the post-mortem examination the pathologist, Dr. Laurence Ball, could find nothing to account for death. The incision was healing cleanly and there was simply a clean suture line of peritoneum in the pelvis. On microscopic examination of the uterus nothing abnormal was found in any part of the wall examined.

Two things in the case impressed me greatly. 1. The force of the uterine contractions were able to make a long complete rupture of the uterus and yet not able to rupture the membranes, though the os was considerably dilated and the membranes of normal toughness. 2. The patient could stand a hysterectomy in so profound a condition of collapse as to resemble imminent death and yet recover virtually from it.

My best thanks are due to Dr. Elsie Impey for her encouragement and perseverance in the treatment of the case.

Birmingham.

NOTE ON A CASE OF ACETYLENE GAS BURN OF THE CORNEA.

BY H. HAWARD BYWATER, M.D. VICT., F.R.C.S. EDIN., D.CH.O.,
HONORARY ASSISTANT SURGEON, EYE AND EAR INFIRMARY, LIVERPOOL.

As I have seen no record of a similar case, I send the following notes for publication.

A motor-lorry driver consulted me early one morning and stated that on the preceding night he was examining an acetylene generator to see if he had put in sufficient water. In order to see the level of the water he struck a wooden match and held it two inches away from the aperture, his right eye being nearer the aperture than the left. He at once heard a report and saw a blue flame, but thought he had escaped any injury. As the right eye became slightly painful the next morning he came to see me.

On examination the lashes of both lids and the hair over the brows were burnt, especially on the right side. On the right cornea there was a central superficial oval-shaped burn; this was longer horizontally and stained brightly with fluorescin. The left cornea was unaffected. The vision of the right eye was 6/18 and that of the left eye 6/6. Four days afterwards the vision in the right eye was 6/9 (3 letters) and seven days after was 6/6.

Liverpool.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.—Professor Warrington Yorke, M.D., of the University of Liverpool, and Dr. B. Blacklock, director of the Runcorn Research Laboratory, have left Liverpool for Sierra Leone upon a medical research expedition organised by the Liverpool School of Tropical Medicine. The principal concern of this expedition will be an investigation of the biting insects associated with tropical diseases in Sierra Leone.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Exhibition of Clinical Cases.—Prolapse of the Spleen.

A MEETING of this section was held on Nov. 13th, Mr. J. **CHARTERS SYMONDS**, the President, being in the chair.

Mr. **ALAN H. TODD** showed a case of Probable Injury of the Crucial Ligaments. The patient, a man, aged 30 years, had injured his knee during a football match when he was aged 15; he did not remember quite what happened, but he had to be carried off the field. Nothing was very obviously wrong with the joint at the time and the school doctor sent him into school next day. After walking on it, however, it became very swollen and painful and he had to remain in bed for ten days. No splint was used. The inflammation subsided. For some years after this the joint felt weak. Sometimes it would become swollen and distended, and then walking would be painful. Occasionally it would "go out," in which case there would be severe pain. Sometimes it would reduce with an audible click. The joint, moreover, sometimes became locked, but he had never discovered a loose body in it. He had always been able to reduce the knee by slow forced extension, but had noticed that if he wore an elastic knee-cap this prevented him from "getting the joint back" unless he first removed the cap. At one time, soon after he left school, he used to get attacks of synovitis every few weeks, but lately these had been much less frequent. In the intervals between the attacks he had been able to lead an active, athletic life, playing a good game of golf or tennis daily, though he had always had to avoid turning round too suddenly. Eleven years ago, when out shooting, he jumped on some muddy ground and twisted the knee badly. It was very painful, and a medical man put it in plaster, fully extended, for three weeks. After this he wore a patella-clamp for a while, but as it failed to prevent the joint "going out" he discarded it. A slight genu varum slowly developed after the original accident, but lately it had obviously increased in amount. The patient walked with a slight limp, but there was no obvious laxity of the joint: apparently he had unconsciously acquired the habit of keeping the thigh muscles well braced up when walking. When sitting he could make the leg slide forwards on the femoral condyles at will. There were slight limitation of extension and flexion and some lateral mobility of the joint. Although there was no evidence of free fluid within the joint, or of hypertrophy of the subsynovial tissue, the circumference of the right knee was $\frac{3}{4}$ in. greater than that of the left. This seemed to be mainly due to several large osteophytes which had formed around the internal tuberosity of the tibia and the internal condyle of the femur at their margins. They were well seen in skiagrams.

Dr. **W. ESSEX WYNTER** and Sir **JOHN BLAND-SUTTON** showed a case of Acholuric Jaundice in which splenectomy had been performed. The patient, a young man, had suffered from jaundice and anæmia all his life, with exacerbations at frequent intervals. His mother, maternal grandfather, an aunt and an uncle on the mother's side were similarly affected. The yellowness of the skin apparently increased during the day, being more marked in the evening than in the morning. He had been worse during the past two years, losing strength and $2\frac{1}{2}$ st. in weight. Physical examination disclosed no abnormality of the thoracic or abdominal viscera, except slight increase in the dulness over the spleen, which could just be felt on deep inspiration. The urine was clear, of a deep red-brown, and had a specific gravity of 1025. There were no abnormal constituents, and both Gerhardt's and the zinc chloride tests for pathological urobilin were negative. Hæmolysis occurred in 0·45 per cent. saline solution, which was about normal. The white cells (5200) consisted of lymphocytes, 39·4 per cent.; polymorphonuclears, 57·5 per cent.; and eosinophiles, 2·5 per cent. The temperature was 99° to 100° F. before operation. The spleen was removed in July, 1914, several ligatures being applied close to the hilum, but the main artery was left unmolested. There were no complications, and the temperature subsequently became normal in the course of ten days. Wassermann's reaction was reported positive before operation and negative after. The reaction was considered doubtful 14 weeks later. The patient left hospital after about a month. The red cells were then 1,880,000 and the white cells 13,000. The resistance of the red cells was greater than normal. A white cell count 11 days after the operation showed lymphocytes, 24 per cent.; hyaline cells, 2 per cent.; polymorphonuclears, 73 per cent.; and eosinophiles, 1 per cent. After about four months the patient had put on $1\frac{1}{2}$ st. and had gained strength and been free from attacks of jaundice. Blood count: Hæmoglobin, 80 per cent.; red corpuscles, 3,700,000 per cubic millimetre; leucocytes, 18,000 per cubic millimetre; neutrophile polymorphonuclears, 51 per cent.; lymphocytes, 33 per cent.; transitional and hyaline cells, 11 per cent.; eosinophile polymorphonuclears, 4 per cent.; mast cells, 1 per cent. A few normoblasts were present, and a considerable number of red corpuscles showed nuclear fragments (Howell-Jolly bodies). Resistance of red corpuscles to hypotonic NaCl solution: a faint trace of lysis, 0·45 per cent. NaCl; marked lysis, 0·3 per cent. NaCl. Two presumably normal bloods tested at the same time showed a trace of lysis with 0·45 per cent. NaCl and almost complete lysis with 0·4 per cent.; thus the patient's red cells were of more than average resistance. The Wassermann reaction was suspicious, but could not be called positive.

Dr. **ESSEX WYNTER** and Sir **JOHN BLAND-SUTTON** also showed a case of Splenic Anæmia after Splenectomy. The patient, a boy aged 13 years, had been ailing for six weeks suffering from lassitude and some enlarged glands. He was sent for treatment by the school doctor, and was thought at first to have Hodgkin's disease, but improved under treatment as an out-patient. On admission in July, 1914, the boy was seen to be anæmic and thin, but made no definite complaint of pain or discomfort. The thoracic and abdominal viscera appeared normal apart from the spleen, which was much enlarged and extended $4\frac{1}{2}$ inches below the left costal margin and inwards to the middle line. Small, firm glands could be detected in the neck, axillæ, and groins. The thyroid was enlarged, especially the isthmus. Blood count: Red cells, 4,200,000; white cells, 2600; hæmoglobin, 60 per cent. A differential count showed no disturbance of the ordinary proportion in white cells. Temperature 99° F. Urine normal. Splenectomy was performed in July. There were firm adhesions, separation of which involved considerable bleeding and some injury to the diaphragm. A gauze drain was inserted, but the wound healed readily, and stitches were removed on the eleventh day. The spleen was large and firm. For ten days after operation the temperature rose to 102° and 103°, and thereafter gradually subsided. Movement of the diaphragm was arrested, especially on the left side, and there was collapse of the lower lobes of the lungs with bronchitis. This gradually cleared and the patient was convalescent after five weeks. Then the blood count was as follows: Red cells, 3,650,000; white, 21,000; polymorphonuclears, 48·5 per cent; lymphocytes, 21 per cent.; eosinophiles, 5 per cent.; and transitional, 25·5 per cent. In November another blood count showed: Red cells, 4,800,000; white cells, 8000; hæmoglobin, 62 per cent.

Dr. **G. HELY-HUTCHINSON ALMOND** showed a case of Myositis Ossificans (juvenile progressive type). The patient, a girl, aged 7 years, was healthy as a baby. Fifteen months ago, when aged $5\frac{1}{2}$, her right hip began to get stiff, and was followed by the left; the stiffness was intermittent at first, but they had gradually become more fixed. She could only walk about 100 yards, and tilted her pelvis up on both sides with each step. She was thin and her muscles were badly developed. There was a slight list of the spine to the left with corresponding curves and raising of the right shoulder. A small patch of ossification could be felt close to the insertion of the biceps of the left arm, and a patch of hardness near the origin of the biceps of the right. The ilio-tibial band on the left side was ossified from its origin to its insertion. The hamstrings of the left thigh were ossified, a skiagram giving the appearance of a calcified shell enclosing the muscles. There was a lozenge-shaped patch of hardness in the outer belly of the left gastrocnemius. No definite patches of hardness or ossification could be made out in the muscles of the spine or trunk.

Mr. **W. J. MIDELTON** showed a case of Dermatitis Herpetiformis with Tuberculous Glands in the Neck. The patient was a girl aged 9 years. She had been well up to the age of 3, but then developed scarlet fever. An eruption occurred after the original rash had died away and was diagnosed as dermatitis herpetiformis. The dermatitis continued. She had been free from the dermatitis from the beginning of August to the end of September, 1911; then it recurred and persisted. Counter-irritation had been commenced at the end of February, 1912. At that time the pustules, blebs, and scabs were well marked, chiefly on the inner aspect of the upper third of the thighs and spreading on to the abdomen. Within three weeks she became well. Occasional slight relapses of short duration had occurred since. About five years ago some tuberculous glands in the neck were operated on and sinuses persisted for over two years. These eventually healed well, but one scar remained bluish-red and had whitish specks in it suggesting lupus vulgaris. In May, 1913, she had a wound on the right wrist which became septic, but soon healed under treatment. In August, 1913, one or two glands in the neck enlarged and one small abscess formed. This was incised, and complete healing took place in a few months. Other glands became inflamed, but no definite abscess occurred. This fact was, in his opinion, significant as showing greatly increased resistance. No sign of the dermatitis had appeared for over 18 months.

Mr. **Midelton** also showed a case of Dermatitis Herpetiformis and Chronic Bronchial Catarrh in a boy aged 9 years. He had been treated by means of continuous counter-irritation commenced in August, 1912, and carried out once a week ever since. The treatment seemed to check the eruption and the boy's general health had much improved.

Mr. **Midelton** also showed a case of Severe Neuritis following Sepsis in a man aged 42 years. He also had been treated by continuous counter-irritation by multiple puncture and irritants. Applications had been made once a week on various parts of the trunk and arms. Recovery had followed.

Mr. **Midelton** also showed a case of Polyarthritis and Severe Neuritis in a man aged 48 years. One year ago pains occurred in arms and headaches returned; pains also in legs, at times severe, lately very severe indeed. Joints of fingers swelled, also knee-joints to some extent. Some slight muscular wasting, especially interossei. At times almost helpless. No drugs were of use in relieving the pain. Knee-jerks absent. Treated with benefit by means of blisters and savin ointment. A blister, 4 in. by 4 in., was applied over the upper dorsal vertebræ and left on 12 hours. This was then removed and a raw surface left. Savin ointment was then applied on lint over the raw place and left on for 12 hours. By repeating this dressing regularly every 12 hours a free, purulent discharge was maintained for 12 days. Zinc ointment was then applied and the raw surface healed rapidly and soundly within three days.

Dr. H. **Batty Shaw** showed a case of Hemihypertrophy in an otherwise healthy girl aged 11 months.

Mr. W. G. **Spencer** read a short paper on a case of Retroperitoneal Prolapse of the Spleen into the Left Loin.

MEDICAL SOCIETY OF LONDON.

Continued Discussion on Surgical Experiences of the Present War.[1]

A meeting of this society was held on Nov. 23rd, Sir **John Bland-Sutton**, the President, being in the chair.

Mr. **D'Arcy Power** said that the wounds which had come under his care were the result either of the conical bullet, of the round bullet, of pieces of shrapnel cases, or of the explosion of large shells. He had seen no case of injury due to bayonet, lance, or sword. He instanced two cases as showing the force of impact. An officer was wounded by a large shell which burst within ten yards. The skiagram showed the presence of foreign bodies deep in the erector spinæ. Subsequent examination proved that two of these substances were sovereigns which had been driven out of a money belt he was wearing straight down on to the transverse process of the first lumbar vertebra, which was smashed to pieces. The coins themselves were twisted and concave; one had upon it the impression of the milled edge and part of the obverse of that which lay above it. In the other case part of the patient's diary had been driven into his thigh and for many days afterwards he shed pieces of its leaves. The most interesting, as well as the most difficult cases, were those in which there had been injuries to the nerves and the nervous system. It was necessary to decide whether the subsequent disturbance was due to damage done by the bullet in its passage or whether it was caused by the bullet as it lay *in situ*. In many cases this could only be determined by the careful examination of a skilled neurologist acting in association with a first-rate X-ray photographer. In such cases the surgeon's action must be governed by their reports. If the damage was done by the bullet in transit its removal would be of no benefit, whilst if the projectile itself was causing irritation it must be removed. He held, therefore, that each case must be considered on its merits, and that it was unnecessary for surgeons to remove every bullet or piece of shell merely because it showed up clearly on a skiagram. The most interesting injuries to the nervous system and nerves were those to which the non-committal name of "concussion" must be given for the present. They had to be distinguished from laceration, hæmorrhage, compression, and other tangible conditions by the fact that no gross lesion was presented by examination during life. They occurred in the peripheral nerves as well as in the spinal cord. Experience showed that the X-ray photographs as they were usually presented were not infallible guides either to the position or to the depth of a foreign body. It might be necessary to undertake an extensive exploration before a bullet was discovered, or it might even be missed altogether. Sloughing rather than suppuration was a feature in most of the wounds, and it was interesting to observe that in many instances where a bullet had passed completely through a limb it was only the inlet and outlet which remained as wounds, the intermediate track having healed. The cause of infection seems to have acted after the injury and not at the time. In consequence of the sloughing secondary hæmorrhage needing ligature of the main artery in its continuity was tolerably frequent. When wounds which had healed became painful it was necessary to reopen them, and in every case the pain seemed to have been due to pieces of clothing which had been left in the tissues, at first without causing irritation. Dry dressings in most cases had had to be replaced by fomentations. Iodine had been employed extensively in the form of 1 drachm of a 2½ per cent. solution in a pint of warm water applied on absorbent cotton-wool. The iodine volatilised if the water was too hot; it was converted into an inert iodate if a starch-containing dressing was used. Much time could be saved if the gaping edges of flesh wounds were brought together by a gridiron of strapping; union by third intention, which was healing by the union of granulations, then took place just as it did in a baby whose hare-lip had failed to unite at once. Mr. Power concluded his remarks by pointing out that the surgeon needed constant help from the physician, the neurologist, the pathologist, and the radiographer if he was to obtain the best results for his patient, that he must know when to stay his hand and when to operate, and that his attitude should be rather from than towards operation. It was better to lay wounds freely open than to plug or drain them.

Mr. J. **Charters Symonds** said that before speaking on the general question he wished to express his entire agreement with the broad principles laid down by Sir Watson Cheyne.[2] He (Sir W. Cheyne) had brought them back to the time when septic infection was the rule, and had shown that the same conditions still prevailed when wounds were exposed and must be met by the methods originally introduced by Lister. Those who worked in hospitals in the early "seventies" must recall with him many old experiences now recurring and agree with Sir W. Cheyne's condemnation of the gauze drain when suppuration existed, of the imperfection of much of the so-called sterilisation, and of the tendency of an operator to attribute failure to any cause but that due to his own lack of watchfulness. The address he had given was a fine confession of faith, and he (Mr. Symonds) would cordially endorse his advice to younger men to read the account of Lister's early work, accessible in those admirable volumes, in the preparation of which his two old pupils and assistants, Cheyne and Godlee, took so large a part. It was with some hesitation that he accepted the invitation to speak on this subject because of his limited experience. Yet he supposed it to be in character not unlike that of most others who had been in charge of hospitals at home.

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[1] The Lancet, Nov. 21st, 1914, p. 1200.

[2] The Lancet, Nov. 21st, 1914, p. 1185.

Though it was not the time to formulate definite lines of treatment, much good might result by an interchange of experience, for they did not all of them treat these injuries in the same way. He proposed to confine his remarks to the question of septic wounds near the large vessels, to the management of septic comminuted fractures, and of wounds of joints already septic, for here life and limb were in peril and the surgeon's whole purpose should be concentrated upon the saving of both, leaving refinements to a later period. The wounds of large vessels—of which two interesting examples had come under his care—and of nerves, of which there were also many, and of the lung and pleura must be omitted. The head injuries he hoped someone else would deal with. A point that must have struck everyone was the septic condition of all but the simple direct bullet wound. The cases had come under care from two to ten days after the infliction of the wound, which even in 48 hours had been septic and the later ones so offensive as to be unbearable, yet the remarkable thing about these cases was the absence of toxæmia. The temperature, even in the fractures, was normal, and the pain where one of two parallel bones was broken trivial. This septic condition must be attributed to the length of time the wounded had lain out in the open, often two and three days before help could reach them, and to the urgency of clearing the field hospitals. There had been no time for full disinfection such as Sir W. Cheyne rightly desired to see, and which was hoped would now be possible, owing to the shifting of the base and the better provision of hospital accommodation. Though most of the wounds on arrival were septic, this was not from the lack of careful dressing *en route*. The Belgian contingent, for instance, had all been dressed on the ship or on the train, and he would like to pay a tribute to the admirable attention these and the other cases received in transit, involving as it must have done a great amount of work on the part of the medical officer in charge and chief of the Red Cross nurses. Why was toxæmia absent in most of these cases? Did the missile sear the tissues in its passage? Certain it was that constitutional effects differed widely from those seen in wounds of equal septicity in civil life. In the treatment of the ordinary flesh wounds he had rested content with frequent boric acid fomentations—not even employing irrigation. In some a 10 per cent. solution of argyrol had been of service. With regard to comminuted fractures by bullets or shells, he believed the best plan, again, was to be content with warm antiseptic applications. To take the first case he was called upon to handle, a drummer in the Loyal North Lancashire with a smashed humerus. The man came in on the sixth day, in great pain, foul pus escaping from the openings, the skin inflamed and sodden, and yet the temperature was not raised. He looked ill and wasted, chiefly from exhaustion, for he had undergone the terrible hardship of the long journey to St. Nazaire. A small dependent opening was made for the better drainage, and a rubber tube passed through. In doing this it was ascertained that the bone was broken into many fragments. Careful dressing once a day with gauze and wool and firm splinting led to rapid improvement. At the end of three weeks the bone had united. He left after four weeks with one sinus and a strong arm. Another man had a bullet through the tibia, splitting off a large fragment from the front, and though a direct wound this was septic and most offensive. Rapid union ensued here also under boric fomentations without any irrigation. There remained a sinus leading to bare bone which must be dealt with later. It was somewhat tempting to open up and disinfect the humerus and remove some of the fragments, and again to plate or wire the tibia. The results exemplified the truth of Sir Watson Cheyne's conclusions that it was far better to leave cases alone; strong limbs would result, though there might be a little imperfection in alignment. He had found bullet and shell wounds of the tarsus more septic and more difficult of recovery. Was this because the joints were involved, or because of the softer character of the bones? Was it wise to depart from the method of non-interference and to curette these cases, say, in the third week? He had just carried out such treatment in a tarso-metatarsal injury and in a carpus. The immediate result in the latter was an increase in the pyrexia from 101° to 104°. In neither was the result sufficiently advanced for drawing any conclusion. While it was, he thought, generally agreed that the better method of treating these wounds was to be content as a routine practice with the application of boric fomentations and gently washing with peroxide of hydrogen or some mild antiseptic, there were some instances where the question must arise as to whether more active measures should not be undertaken. To take two examples—one where a main vessel lies in the wall and another where a joint is involved. Some of the septic wounds of the thigh had caused him no little anxiety for some days. A bullet entered the outer and back part of the thigh, passed forward behind the femur, and took its exit an inch inside the line of the superficial femoral. There being great pain and no improvement in the septic condition, the wound was examined under an anæsthetic, the greatest care being taken to avoid injury to the surface. The femoral sheath must have been exposed, for the vessels stood out from the inner surface of the track as a rounded cord. Beyond avoiding all injury and rough irrigation the case was left and had done well. So great was the danger of secondary hæmorrhage that he deemed it necessary to have a tourniquet by the bedside and the attendant instructed in its use. In another a ricochet bullet carrying a sharp hook-like projection from its base tore across the line of the femoral just above the apex of Scarpa's triangle. The track, some six inches in length, discharged offensive pus. Though it was impossible to clean this wound, then some four or five days old, the recovery under boric acid fomentations took the usual time of two or three weeks. These gave rise to some anxiety, and he would raise the question whether such wounds should not be enlarged to afford better means for disinfection. One thing which seemed to him to be necessary in such cases was to remove any fragment of shell, bullet, or clothing with as little disturbance of the parts as possible, and to provide efficient drainage by means of a large rubber tube. This might involve an incision in a dependent part. The liability to secondary hæmorrhage would be increased if the patients had other injuries and were also septic. If seen within a few hours of the injury and the wall of the vessel was exposed, should the artery be ligatured when the wound was being cleaned, or should this be deferred in the expectation that if the disinfection had been effective the danger of secondary hæmorrhage had been reduced to a minimum? The wound becoming septic, should the main vessel be ligatured and divided in the wound, or was it better to combine this with proximal ligature? Or, again, was proximal ligature sufficient? To take a case in point: an officer arrived ten days after being severely wounded in three places. The left arm had been amputated in the field hospital and showed limited suppuration. The right foot was swollen and septic from a bullet wound of the tarsus, the ankle-joint, as was discovered in a few days, being involved. There was a ragged septic wound on the inner side of the knee leading deeply into the popliteal space, and the skin of the leg was also red and infected. From the popliteal wound issued most offensive pus. The man was wasted, grey, and septic, the temperature 103°, and he suffered a good deal of pain, borne with that admirable courage which all must have admired in those who had come home seriously injured. He would not enter into such great detail if a large principle were not involved and were not this an example of a considerable class, though it must be admitted that each case must in the end be treated on its own merits. Should immediate amputation have been performed through the thigh in this case? Should the popliteal space have been opened up and the condition of the parts ascertained? He improved in a general way for three days, the temperature fell and the popliteal wound became cleaner. Then fresh infection arose and the temperature reached 103° on the seventh day after admission, the seventeenth from the injury. On this day the ankle-joint was opened and pus evacuated. Ten days after admission and 21 after the injury slight hæmorrhage occurred from the popliteal wound. This being repeated next day, he opened the wound and on passing the finger gently in there came a great burst of bleeding, and it was obvious that the main vessel had been opened. A small fragment of the nickel casing of a bullet was found lying outside the vessels. The artery was with some difficulty secured above and below the wound and then it became obvious that the vein also required ligature. As he proposed, notwithstanding the slender chance of recovery, and in view of the septic condition of the leg and foot, to avoid amputation if possible, a kangaroo tendon ligature was placed on the femoral at the apex of

Scarpa's triangle as a further protection. Next day, the foot being discoloured and the leg cold, amputation was performed through the thigh. Though the condition was unfavourable in all respects, he was glad to say the patient was recovering. An examination of the popliteal space when the man was first seen would doubtless have revealed the injury to the vessel, seeing it was then 10 days old. This would in all probability have precipitated amputation, with the man less able to bear it than he was after a week's rest. Dealing alone with these wounds in a septic condition, he was disposed to think the better practice was to examine and drain, and if the artery was found to be exposed and its sheath injured to ligature the main trunk some distance above—e.g., the brachial in the case of the forearm or the femoral for popliteal injury. He did not mean to say that local ligature of the smaller vessels was not in many cases sufficient. Recently he had to lay open the calf for smart secondary hæmorrhage coming from what he took to be the peroneal artery. The bleeding point was ligatured and the wound treated successfully by the open method. There must be many such cases, and whilst amputation offered an easy and, other things being equal, a comparatively safe way out of the difficulty, it would seem reasonable, in view of improved methods, to go much further in the attempt to save a limb than formerly was justifiable. There was one other subject to which he wished to refer, more to ask for than to give information. What was the best method of immobilising and transporting cases of fracture of the femur? Of all injuries these must suffer most in transit. It might be impossible to keep them in an advanced base, and he was told that when the base was at St. Nazaire the order was that all cases should be sent home. When the wound was being cleaned, was it wise to apply a plate with a view to fixation during transit? Where the wound was large and the bone exposed, and an attempt was being made to save the limb, it seemed to him, judging from his experience of compound fractures, to be a sound practice to apply a plate. In the case of the tibia and fibula his practice at Guy's Hospital was to plate in compound fractures when it was otherwise difficult to secure good position. In bad cases the plate had to come out and was sometimes exposed throughout the whole period of its employment. It served to retain the fragments in position, while the muscles wasted and the surrounding callus formed and enabled more satisfactory dressings to be applied. In itself the plate might have done some harm, but the final result was, in the severe cases with loss of skin, better in his judgment than could have been otherwise secured. So that he would, did the opportunity occur, employ plating or wiring, preferably the former, in suitable cases. To open up any clean bullet wound except to secure a large vessel was a practice which could not be defended even by the most ardent advocate of plating fractures. For transit, so far as he was able to judge, Hodgen's wire splint, designed by this surgeon during the American Civil War for the very purpose, was still the best. The frame should be suspended as Hodgen directed from a hook at the end of the ambulance. In this connexion he fully agreed with Sir Frederic Eve that no other splint permitted the dressing of compound fractures more conveniently and with less distress to the patient. It seemed to him to possess no rival. Having stated his own suggestions, gleaned from civil experience, and thus raised a very important question, he hoped there might be someone present with first-hand knowledge who would be able to say how these severe cases were being handled. In discussing the value of antiseptics Sir Watson Cheyne had done good service in bringing them back to the merits of carbolic acid. It was good to hear that Lister's greatest exponent had not lost faith in an antiseptic with which the earliest and greatest triumphs were secured. While he had himself relied upon carbolic and mercury in the immediate treatment of compound fractures and suppurating joints, he was bound to admit that the 2 per cent. solution of iodine in rectified spirit had given remarkable results in the treatment of large lacerated wounds with or without involvement of bones. It would be an interesting inquiry—which he hoped someone would institute—to ascertain the separate value of each component of this preparation. He was inclined to think that the alcohol would be found to take no small part in the beneficial results. In some form probably alcohol had been used in the treatment of wounds from time immemorial, as in the rite of circumcision. He fancied there was more than met the eye in the application of wine and oil applied by the Good Samaritan, who might with much good reason be considered the first antiseptic surgeon on record.

Dr. W. IRONSIDE BRUCE exhibited a large number of radiograms showing the effects of gunshot injuries. He said that X rays could determine the exact position of a bullet in the tissues, and if the skin was marked it ought, theoretically, to be possible to cut down directly upon it and remove it. There were certain difficulties, however, which were encountered: 1. The distance, as estimated by X rays, conveyed nothing anatomically as to the situation of the bullet, for this depended upon the thickness of the skin, the subcutaneous tissues, &c. 2. For localisation it was necessary to make use of a vertical plane, and this should be followed absolutely at the time of operation. When, owing to surgical requirements, this was deviated from, no further use could be made of the X-ray localisation. 3. Immediately the incision had been made the marks on the skin were no longer useful. Consequently, the accurate information obtainable by X rays could not be utilised to the full.

Mr. W. H. H. JESSOP said that X rays gave certain evidence of foreign bodies in the eye. He had been impressed by the extraordinary number of cases of patients brought over from the war who were blind. He had seen four such. Nothing was observable by the ophthalmoscope, and without treatment other than rest perfect sight had been regained. In two others the blindness was accompanied by blepharospasm. These had also completely recovered. All had been exposed to shell fire, and, he thought, had probably been affected by it. He cited also the case of a patient who had formerly had miner's nystagmus. The man had enlisted, and after driving horses the nystagmus had returned.

Mr. R. P. ROWLANDS said that Sir Watson Cheyne in his valuable address had wisely confined his attention to the most vital question of all. The rapid and smooth healing of wounds was of the greatest importance to the soldier and to the country. Suppuration placed his life in jeopardy and militated against his early and complete recovery. It greatly interfered with primary or early operation for the repair of injuries of special structures, such as nerves, tendons, or bones. It was well known that secondary or late operations for these injuries were more difficult and less successful. When many men were seen returning with septic wounds, the dirty conditions under which most of the injuries were sustained should not be forgotten, and especially the unavoidable delay in treatment. It was very difficult for them, working under the most favourable circumstances at home, to realise the awful conditions of the war and the unparalleled difficulties which confronted their *confrères* in France, who by common consent were doing such devoted and heroic work. It was their duty to offer fair criticism and to help by suggesting practical methods which might be expected to improve the results. They could do this by (1) laying stress on the Listerian principles which governed the successful treatment of soiled wounds, and (2) by making some definite practical suggestions which could be actually carried out under the difficult and unexpected circumstances of this war. Sir Watson Cheyne and others had dealt with these points with great ability and detail. He would confine himself to some more general remarks. Most of the shell and shrapnel wounds were of necessity laden with bacteria from the skin, clothes, or from the peculiarly infective soil of Northern France or Belgium. The risk of infection from each of these sources was far greater than it was in the Russo-Japanese war. There, frequent bathing and changing into clean clothes, the absence of infective soil, and the intense cold were all favourable circumstances, which probably accounted for the good results obtained. It was obvious that clean and dirty wounds required very different treatment. Most were fairly satisfied with the aseptic treatment of clean operation wounds. The less these were irritated by mechanical or chemical violence the better they did and the greater freedom there was from pain. Before the revelations of this war most of the medical men at the front were so very familiar with the brilliant results of aseptic surgery and had so little experience of soiled wounds that the introduction of strong antiseptics into the wounds was abhorrent to them. They feared pain and sloughing. But dirty wounds required cleansing as soon as possible before bacteria multiplied and invaded the tissues. This was best carried out by a combination of mechanical and chemical means. The longer the interval since the accident the more necessary were strong antiseptics which were capable of permeating the invaded tissues and inhibiting the growth of bacteria. Unfortunately strong antiseptics were useless and even harmful after 24 or 36 hours, and a great many of the wounds could not be adequately treated within that period. Under the present circumstances the antiseptic used must be strong enough to destroy spores in a short time. Strong antiseptics might prove to be particularly valuable when thorough mechanical cleansing could not be carried out owing to delay in getting to the field or base hospital. Liquefied carbolic acid was certainly a very powerful and valuable antiseptic which he had often used with advantage for earth-soiled wounds. But if we recommended its routine use difficulties of supply and cost might soon arise. Therefore he suggested the appointment of a committee of surgeons, bacteriologists, and chemists to discuss the variety and strength of suitable antiseptics. Their report would probably be very valuable. For sterilising the skin his colleague, Mr. Turner, had found picric acid, 1 per cent. solution in methylated spirit, at least as efficient and very much cheaper than the solution of iodine in general use. The most suitable dressing should also be discussed, for secondary infection of the apertures of bullet wounds seemed to be occurring in some cases. As regards other details of the primary treatment, free drainage and adequate antiseptic dressing were most important. When wounds were already septic free drainage, irrigation baths, and fomentations were the chief indications. Radical operations for the repair of nerves, tendons, and bones had to be deferred until sepsis had subsided. In conclusion, he said that it seemed to him that hope of improvement depended upon: 1. Getting the patients into the field or base hospitals earlier, especially by the use of special motor field ambulances instead of the slow and uncomfortable horse ambulances. 2. Increasing the staff and general facilities for cleansing the wounds at the field and base hospitals. There were numbers of medical men anxious to serve in this way. The present facilities made it quite impossible to carry out the routine treatment advised by Sir W. Cheyne. 3. More facilities for bathing and changing garments for the men in the fighting line. 4. Moving bad cases as little as possible. Now that the base was fixed it ought to be possible to keep the bad cases still and under observation. It was difficult or impossible to treat these cases adequately during long journeys to England. They all knew that the difficulties of the organisation and adaptation of the Royal Army Medical Corps in this war had been enormous, and that in spite of shifting bases and unforeseen circumstances the service had been brought to a state of efficiency unequalled by that of any other army. Still much remained to be done for the greater comfort and better treatment of the wounded. This great and rich country ought to provide everything for the sick and wounded without the aid of any outside society. Everything ought to be under one supreme head, and that head a medical man, who should have perfect freedom of action. He should be free to order as many medical men as were required for the front from time to time.

Mr. R. H. **JOCELYN SWAN** said that he had had experience of about 2000 cases of men wounded from the front at the Herbert Hospital, Woolwich. He thought the chief features in the treatment of septic cases were adequate drainage and disinfection. Nearly every case was septic, and the point of greatest importance was what was the best treatment to be applied at the front. They could not but realise the great difficulties experienced by the Royal Army Medical Corps, who were often working under fire, not only in the fighting line, but also in the field hospitals. At Woolwich, dealing with wounds which were already septic, they had opened them freely, washed out with hydrogen peroxide or weak permanganate solution, and drained without attempting to sew them up until the sepsis had been controlled. The organisms they had most commonly found were staphylococci, streptococci, these two combined, and organisms of the proteus group. There had been ten cases of tetanus. These had been treated by opening up the wound, disinfecting it with hydrogen peroxide, and injecting by lumbar puncture large doses of antitetanic serum. Two had died, seven were well, and one was still under treatment. He thought it wiser not to attempt an amputation when symptoms of tetanus had commenced, but to be content with opening up the wound freely. There were three cases of malignant œdema,[3] and pyocyaneus infection was not uncommon. A considerable number of cases of secondary hæmorrhage had occurred. Like Mr. Symonds he had been impressed by the lack of toxic symptoms, even in cases so severe as when large collections of pus formed in the knee-joint. There were 18 examples of skull injuries where the bullet entered and passed into the brain. In five the brain had been traversed completely, and two of these got quite well after the depressed fracture had been attended to. There were several cases in which the scalp wound was very small, but much comminution of the skull had taken place perhaps associated with cerebral abscess or subdural hæmorrhage. He thought that skull injuries should be dealt with forthwith, but abdominal and thoracic injuries were often well left alone. Cases of injuries to the chest with fluid in the pleura other than pus did not require surgical treatment. The same was true of abdominal injuries even if it appeared that the intestine had been traversed. He was averse to looking for bullets because X rays had shown their presence except in the case of skull injuries.

Sir **JOHN BLAND-SUTTON** said he had followed Sir W. Cheyne's opening remarks with the keenest interest. No advance, however, could be made by simply following in the paths of predecessors. Lord Lister himself had perpetually introduced changes in his methods. The middle course was the path of safety. While taking advantage of aseptic procedures, it was impossible altogether to avoid antiseptics. He himself had given up carbolic acid because he was peculiarly susceptible to its effects. For many years he had used perchloride, but lately had taken to iodine and was pleased with its results. It was a striking thing that, although these wounds were septic, they cleared up rapidly with fomentations and particularly well with peroxide of hydrogen, and when the sepsis had subsided foreign bodies could be cleared away, the wounds healing with astonishing rapidity.

The **PRESIDENT** announced that the next meeting of the society would be devoted to a discussion on the Treatment of Tetanus.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

Enteric Fever in War.

A **MEETING** of this society was held on Nov. 20th, Sir **HAVELOCK CHARLES**, the President, being in the chair.

Sir **WILLIAM OSLER** read a paper on the subject of Enteric Fever in War. He stated that the Empire was confronted with a great task in which the medical profession might take a leading part. Camp diseases had always played an important part in war, but of these enteric fever was by far the most serious, and, so far as this was concerned, we were now being put on our trial. There were four chief points to be noted: (1) The importance of the individual as a factor in infection which demanded careful preventive measures, and in particular the sterilising of the fæces and urine; (2) the existence of mild and unrecognised cases which were difficult to diagnose and which were often mistaken for malaria or pneumonia, as had happened in the Spanish-American and South African wars; (3) the discovery of typhoid carriers, who are a source of great danger, especially where they may be concerned with the handling of food, as in the case of cooks, bakers, or milkmen; and (4) the possibility of protection by immunisation which had produced most striking results. These were particularly shown in the case of antityphoid inoculation in the United States Army, which was voluntary from 1909 to 1911 and compulsory since 1911. The figures which he quoted were well known, and they were in his opinion conclusive as to the benefit of this measure of prophylaxis. Referring to the possibility of unpleasant after-effects, he had taken the trouble to investigate any cases which had been brought to his notice. Usually there were only some slight headache and rise of temperature on the day succeeding the inoculation, with some diarrhœa or constipation. There was, however, the possibility of more serious symptoms developing. As regards England's present position, he regarded this as singularly favourable, though it had to be remembered that there were 1600 cases of enteric fever in England in 1912, so that there was a possibility of an epidemic developing. In order to prevent this there should be a most careful scrutiny of all doubtful cases. Warning should be taken from the fearful experience of enteric fever among the recruits in America on the occasion of the Spanish-American war, when it was recognised that the disease was not so much water-borne, but was conveyed by fingers, food, and flies. The same record had been met with in most campaigns, and notably in the South African war. So far as the present war was concerned there was no record of any serious disability from enteric fever. He was unable to give definite information, but judging from cases received from the front in the Oxford base hospital it could not be very frequent, as he had only noted two or three cases. Yet all the time the conditions of the war were such as would naturally predispose to an outbreak of the disease, and under these conditions he considered that it would be a great triumph for sanitation if no devastating outbreak of enteric fever were experienced during the war.

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[3] THE LANCET, Nov. 14th 1914 p. 1161

The President congratulated Sir William Osler on his contribution to the important subject under discussion, and expressed his strong belief in antityphoid inoculation. He quoted statistics to show the great improvement which had taken place in the health of the Indian army since this had been introduced. He regarded the problem of typhoid carriers as a very serious one, and in India isolation stations were arranged for convalescents from typhoid who still retained the infection. Paratyphoid cases were also very troublesome, many of them becoming chronic carriers.

Sir John Broadbent referred to the insidious character of paratyphoid and the frequency with which this might be conveyed by carriers. He pleaded for greater care in dealing with the problem of the excreta in camps at home, and recommended the S.O.S. system, which not only rendered sewage innocuous but made it possible for it to be utilised.

Dr. Walter Broadbent stated that he had investigated six cases of illness after inoculation at Brighton. The first was one in which an attack of pneumonia supervened the day after the first dose of vaccine, and terminated fatally on the seventh day. Although the patient was feeling unwell he did not lie up, and so caught a chill and developed pneumonia. In the next series of four cases feverish symptoms developed six to eight days after the second dose of vaccine. Feverish symptoms persisted for some days, but in the end recovery was complete. These men were inoculated on the same day, and perhaps there might have been some defect in the vaccine. In the sixth case the symptoms of fever came on two days after the second dose of vaccine. He also appeared to be doing well when last seen.

Dr. E. W. Goodall, after referring to the conclusive results of inoculation, expressed disappointment that they had not received more detailed news from the front. France and Belgium had been regarded as lands in which enteric fever was particularly rife. He had treated Belgian cases, but found it very difficult to obtain reliable particulars, though reference had been made to the existence in France of special typhoid wards. He was somewhat sceptical as to the importance of typhoid carriers, but believed that the danger of personal infection should be recognised.

Dr. G. Newton Pitt referred to an attack of sclerotitis occurring after inoculation as might happen in a case of gonorrhœa.

Fleet-Surgeon P. W. Bassett-Smith, speaking from the naval point of view, stated that inoculation was widely used in the navy. He knew of a case where a typhoid carrier was the means of carrying enteric fever from one ship to another.

Dr. J. M. Atkinson thought men were sent to the front too soon after inoculation, and gave instances of influenza and albuminuria which had come on after inoculation.

Dr. F. M. Sandwith questioned whether the deltoid region was the best site for inoculation. He had performed more than 1000 inoculations without any untoward results, and he believed that such ill-effects when they occurred were due to failure to take care after inoculation. He quoted a case where several men who had been inoculated were allowed to go for a route march the next day and consequently fainted. There should be 24 to 36 hours' rest after each inoculation. Segregation was of great importance in the treatment of enteric fever, and in the matter of the disposal of sewage he recommended the use of an incinerator. Carriers were specially important in India.

Dr. R. A. O'Brien alluded to a method of using slaked lime to disinfect typhoid stools. One tablespoonful of slaked lime was added to a cupful of boiling water, which generated sufficient heat to destroy bacilli. He had noticed records of outbreaks of enteric fever among German troops at Lille and Roubaix. This was an interesting fact when it was realised that the Germans had somewhat despised English methods of dealing with the disease.

Sir William Osler, in reply, referred to the suggestion that the rehearsing of cases of illness following inoculation might deter people from submitting to it. He contended that the people should be told the full truth, and that in the end they would trust in their medical advisers. Few therapeutic measures, even such as hypodermic injections, were devoid of all risk, yet they were not neglected on that account. He considered that the problem of the disposal of sewage was a most urgent one, and he was glad that medical officers of health throughout the country had the matter in hand. As to the question of carriers, the danger arose when the individual had to deal with food—e.g., a cook. He agreed with Dr. Sandwith that the deltoid region was not the best for the inoculation. He preferred the pectoral region or the abdominal wall. He was interested in the system of disinfection mentioned by Dr. O'Brien. Referring to the case of sclerotitis he mentioned a case of monarticular rheumatism which appeared to be very similar to a gonorrhœal attack. He agreed also that men should not be sent to the front too soon after inoculation.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Obstetrics.

Exhibition of Specimens.—The Heart and Kidneys in Pregnancy.

A meeting of this section was held on Oct. 30th, Dr. M. J. Gibson, the President, being in the chair.

Dr. Gibbon FitzGibbon showed a Uterus with Malignant Adenoma removed from an unmarried patient, aged 60, who had been told when 35 years of age that she had a fibroid and advised not to have it removed. Menstruation was always normal, and the menopause occurred at 48 normally. Since then there had been no bleeding or discharge until seven months before being first seen by Dr. FitzGibbon. Bleeding had then occurred and lasted 14 days, and had been recurring irregularly ever since, and sometimes profusely. On examination the uterus was uniformly enlarged, about the size of a four months' pregnancy, somewhat soft, and the cervix small and atrophic. The diagnosis was myoma, probably undergoing some degeneration. After laparotomy and panhysterectomy the patient made an excellent recovery. The specimen showed a soft cauliflower growth filling up the cavity of the uterus and growing all over the walls, which were very thick, about 1¼ inches. Sections of the growth showed typical adenoma with very marked malignant characters in some parts, and invading the wall of the uterus. The cervix was quite free from invasion.—Sir William Smyly said there could be little doubt that it was a myoma which had been invaded by a cancer.—Dr. R. J. Rowlette said the specimen appeared to him to be a carcinoma occurring in a uterus already the seat of a fibroid. Such an event was not uncommon where a fibroid gave rise to irritation of the endometrium.—The President said that since carcinoma of the body was commoner in cases where fibromyomata were present than in cases in which they were absent, and since degeneration of fibromyomata was most usual after the menopause, it was necessary to abandon the opinion that after the menopause fibromyomata were not likely to give trouble.

Dr. B. Solomons showed a Fibroid Uterus from an unmarried woman aged 27, who came to hospital complaining of uterine hæmorrhage. On examination fibroid uterus was diagnosed, though the uterus was quite smooth and felt like an ordinary myometritis. Palliative curettage and styptic treatment were carried out, but the hæmorrhage recurred, and she returned to the hospital. The abdomen was opened in the hope of performing myomectomy, but when the uterus was opened it was found to be studded with myomata, some submucous, others interstitial, and hysterectomy was done. The case showed how impossible it was to promise myomectomy.—Mr. S. SHEILL considered that the most important point about the specimen was the early history.—The PRESIDENT considered that hysterectomy was the only course which could have been adopted in this case.

Dr. V. J. MCALLISTER gave a summary of the various conditions of the heart which might influence pregnancy, and the forms of renal lesions which might pre-exist or occur during pregnancy.—Sir WILLIAM SMYLY said that in practice one had to go according to symptoms much more than physical signs; if the heart was competent it might be left alone, but if it became incompetent it would be necessary to try to restore it by strophanthus and digitalis, and if not successful the patient should be delivered. He always advocated that in case of kidney disease which did not improve under treatment the uterus should be emptied.—Dr. E. HASTINGS TWEEDY said he held that all the pathological conditions found in association with toxæmia arose as a consequence of the poison, and in no instance was the poisoned state the result of the kidney lesions. He was glad to understand that the deleterious influence of milk and other foods had become recognised, at all events in Dublin, as a causal agency in eclamptic fits. He was convinced that foodstuffs acted as partial poisons to almost all pregnant women, which accounted for the presence of morning sickness. A tolerance against these food poisons became established in most instances, but when this was not so acute toxæmic degeneration resulted.—Dr. W. M. CROFTON said that in certain cases of eclampsia he had found the urine badly infected with micro-organisms. It might be well to examine the urine bacteriologically in order to see if this was a common occurrence. In pregnancy there was usually great hypertrophy of the suprarenals, and if the secretion of these was unbalanced this might be a cause of the high blood pressure.—Dr. SOLOMONS said that everybody seemed to accept the food theory as advanced by Dr. Tweedy. He mentioned a case of eclampsia where the patient was well for 24 hours, but when milk was given a fatal result ensued.—The PRESIDENT said that he had seen a certain amount of trouble, even in ordinary uncomplicated disease of the heart. The increase of blood pressure during pregnancy or labour told on a diseased heart. In cases of the toxæmia of pregnancy he considered the blood pressure of great importance. He failed to see how food could produce the toxæmia of pregnancy, but when toxæmia was present food, and particularly milk, should be withheld until the toxæmia had definitely decreased.—Dr. MCALLISTER, in reply, referred, among other points raised, to the relationship between blood pressure and eclampsia. He considered it more favourable for a patient to have a moderately high blood pressure if she had or was going to get eclampsia. He thought that possibly many patients did not get eclampsia because their blood pressure was high.

HUNTERIAN SOCIETY.—A meeting of this society was held on Nov. 11th at the Barbers' Hall, Dr. T. Glover Lyon, the President, being in the chair.—Dr. Alexander Morison read a paper on Pernicious Anæmia. He said that the exact discrimination of pernicious anæmia was possible only after careful examination of the blood picture. Alone among anæmias it showed a great reduction of total red blood cells, a large proportion of megalocytes, a high colour index, and usually a reduction and never an excess of white cells. After death there was always in the liver, and usually in the spleen and kidneys, a peculiar deposit of iron rendered visible to the naked eye by a special test. The onset was probably insidious in every case, an apparently acute onset being a culmination, not a commencement, and corresponding to a septic phase in the disease. The termination was uniformly fatal. Functional disturbances, due to abnormalities in the blood-supply, appeared first, organic lesions later on. Superficial extravasation was never extensive; small visceral extravasation had been detected on microscopic examination after death. The disease might be due to a blood destruction or to a disorder of blood production. The constant features of the condition would suggest a constant cause. Dr. William Hunter assigned an oro-gastro-intestinal origin to the disease, but sepsis of the digestive tract was common, and pernicious anæmia was rare. The establishment of a specific bacterial, protozoic or toxic cause would favour the view of hæmolytic origin. Some thought the disease due to a faulty elaboration of the blood. The notable deposit of hæmosiderin would thus be due to the presence of an excess of megaloblasts and megalocytes, not to excessive blood destruction, the cause of the disease being not necessarily from without or toxic, but none the less a malignant one, which was preventing normal blood development. After rest and fresh air, treatment consisted in the rectification of errors in mouth, stomach, and intestine. Arsenic, either in inorganic form or as salvarsan, held out the best hope. The latter was preferable when the patient was under constant observation, the inorganic form being given afterwards in small doses. He had used salvarsan mostly in 0·2 gm. doses (=1/13 grain arsenic) suspended in oil given intramuscularly every week, or 0·4 gm. every fortnight; benefit was usually but not always marked. He had never succeeded in raising the red cells to 5,000,000. The effect of arsenic in promoting the elaboration of blood was attributable to its stimulation of the blood-producing organs, either directly or through the nervous system.—Mr. A. White Robertson, in a paper on the Master Toxin, said that our knowledge of the processes at work in any toxæmia was inadequate and fallacious without a knowledge of the serological and cytological state of the blood. It was to the white cells and not the red that we must first look for information of a toxic condition of the blood. He had been able from a simple blood examination to identify in cases with widely differing symptoms the master toxin, whose subversive agency had allowed the development of the secondary invasions. Recurrent malaria, especially of the subtertian type, not only masked many subsequent diseases, but actually laid the patient open to them. Similarly, it was well recognised that gonorrhœa and syphilis were followed by loss of resistance to other infections. In his opinion measles, whooping-cough, and influenza, no less than exposure, accident, and mental shock, acted frequently as neuro-depressants and predisposed to tuberculosis and the many other bacterial disorders, even perhaps after a period of years. Our duty, then, must be to realise that the after-treatment of these neurotoxic conditions was, if possible, of greater importance than that of the immediate symptoms. After long study of the blood changes in tuberculosis, he had concluded that if the master toxin were recognised and dealt with, the disease was entirely curable by a direct immunising process. The master toxin arose from the coli group, and X ray examination confirmed the presence of intestinal stasis. Recent investigations were opening out a wider conception of the influence of these master toxins, as witness recent papers by Mr. Rupert Farrant on the thyroid,[1] and the results of Sir Arbuthnot Lane's abdominal surgery in such different sequelæ of stasis as tuberculous hip-joint, goitre, and Raynaud's disease.[2] He had lately begun to have a suspicion that there might be some connexion between the mutant coli group and pernicious anæmia. We might yet come to insist upon X ray examination of the gastro-intestinal tract in this disease. He would like to see such an examination made legally compulsory before any case of dementia was transferred to an asylum.—The papers were discussed by Dr. W. Langdon Brown, Dr. Morison, Dr. O. K. Williamson, Dr. S. Russell Wells, and Dr. Mackenzie Wallis.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on Nov. 13th, Mr. Herbert Jones, the President, being in the chair.—Dr. W. J. Howarth read a paper on the Marking of Meat. He said that in the term marking of meat he included the marking of the carcass either by certificate, label, seal, tag, stamp or brand, or by any other method, such mark to indicate that the meat had been examined and approved as fit for human consumption and to give information as to the date and place of inspection, and of the person making the inspection. About 18 years ago the question of marking meat was under consideration in a fairly acute form owing to the development of the colonial meat trade. Since then the importation of live animals had practically ceased and there had been an enormous increase in the chilled and frozen meat trade which had become centralised until it was now almost entirely in the hands of large firms who had gradually improved their work by the application of better methods and had brought the quality of imported meat up to a high standard. Home-grown meat always had been, and still was, the best meat, and the arguments in favour of marking were mainly that it prevented substitution. Definite proofs of injurious effects resulting from the partaking of unsound meat had not been common—a fact that was possibly due in this country to the general custom of cooking meat, though it could not be denied that real dangers did exist. The actual nutritive value of meat should be considered, and more attention was now directed to this than was formerly the case. Meat should not only be sound but should possess a distinct nutritive value. To mark meat after examination of the carcass alone would be a retrograde step, if for no other reason than that such an examination would in many instances be unreliable. The only place where a really satisfactory and reliable decision as to the suitability of a carcass for human consumption could be made was at the place of slaughter, when every organ was available for inspection. The want of uniformity in meat inspection and the deficient facilities for inspection would render a general compulsory system of meat marking impracticable at the present time, but considerable advantage would be derived if some form of optional marking could be devised. The Local Government Board should be requested officially to approve a system of meat marking, and should decide upon the nature of the mark and the manner of marking, and take steps to safeguard the use of the mark only by a recognised authority. The power to use the mark should only be granted on request and after the Board was satisfied that satisfactory inspection of meat was in force in the district concerned.—Dr. R. Veitch Clark considered that the private slaughter-houses increased the difficulties connected with the control of meat supplies. Although he thought that in the course of time an extensive system of meat marking would have to be adopted, he was of opinion that the time was hardly ripe for the development of an optional scheme. Experience in Leeds had shown that stricter inspection resulted in indifferent meat being sent to be sold outside the town.—Dr. W. A. Bond agreed that the marking of meat even on an optional basis was very desirable.—Dr. G. Buchan feared that optional marking would press hardly on the honest butcher, and he advocated the giving of compensation to the butcher who bought an animal in good faith which was subsequently condemned as unsatisfactory.—The President pointed out that the question of meat marking was altogether bound up with that of the abolition of private slaughter-houses. He was not convinced that any system of optional marking would be either practicable or desirable, though he was in favour of the adoption of a general and uniform scheme for the whole country.

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[1] THE LANCET, March 7th, 1914, p. 680.

[2] THE LANCET, March 15th, 1913, p. 755.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 4th, Dr. W. R. Smith, the President, being in the chair.—Dr. C. H. Cattle gave a lantern demonstration illustrating Irregularity of the Heart-beat. Reference was made to the great advances in our knowledge of this subject due chiefly to the clinical and experimental investigations in this country of Dr. J. Mackenzie and Dr. T. Lewis. The classification of irregularities now generally adopted followed the lines laid down in the well-known works of those writers. Among the more common forms of cardiac disorder referred to were the following:—(1) Sinus arrhythmia, or the youthful type of irregularity; (2) delayed conductivity and heart-block; (3) premature contraction of auricle or ventricle; (4) tachycardia with regular or irregular rhythm; (5) auricular flutter and auricular fibrillation; and (6) exhausted contractility and pulsus alternans. Tracings were shown illustrating the normal and abnormal forms of venous pulse, and reasons were given for the change of type during auricular fibrillation. It was also shown how the different forms of cardiac irregularity may be differentiated both by means of the polygraph and other clinical methods. Valuable as the graphic method undoubtedly is, its results must always be taken in connexion with a complete survey of all the clinical features of a case. An attempt was made to explain the action of digitalis, and illustrations were shown of its effect in slowing the heart and occasioning coupled beats.

Reviews and Notices of Books.

The Curves of Life: Being an Account of Spiral Formations and their Application to Growth in Nature, to Science, and to Art, with Special Reference to the Manuscripts of Leonardo da Vinci.

By THEODORE ANDREA COOK, M.A., F.S.A. With 11 plates and 415 illustrations. London: Constable and Co., Limited. 1914. Pp. 479. Price 12*s.* 6*d.* net.

MORE than 20 years ago the author, after a long visit to the banks of the Loire, produced for the inspection of some distinguished biologists a photograph of the inside of the open staircase at Blois, showing the spiral lines carved on the central column and the vaulting, when the late Professor Charles Stewart "loudly proclaimed his recognition of the spiral curves therein depicted," and asserted that "the curves upon its central columella were identical with those of *Voluta vespertilio.*" The shell was fetched, "a longitudinal incision was made, and the four-fold spiral revealed within upon the columella. In spite of many other conflicting interests and duties," says the author, "I have thought of that chance discovery ever since." The result is a wonderfully suggestive volume, with its profusion of beautiful and appropriate illustrations culled from organic and inorganic nature and from some of the masterpieces of art to show that "with very few exceptions the spiral formation is intimately connected with the phenomena of life and growth." The author, having an intimate knowledge of the work of Leonardo da Vinci, enters into a critical exposition of the evidence which leads him to the conclusion that the name of the unknown architect of the left-hand spiral staircase in Blois was none other than Leonardo himself.

As the author's investigations on "spirality" broadened—and they ranged amongst living forms from the microscopical foraminifera and spirilla to the nautilus, which most closely approximates to a logarithmic spiral—aid was required to pursue the subject. With the assistance of expert authorities in separate divisions of research he has now presented in well-reasoned and suggestive chapters, supported by many literary references, an array of facts to illustrate the prevalence of the spiral in natural structure and phenomena. As these facts arrange themselves in his mind, a mind keenly alive to resemblances and differences between things, they lead him to suggest on occasion some remarkable analogies.

The range of subjects dealt with is so varied that even students of anatomy and morphology will find new light thrown upon familiar phenomena. After giving an account of the growth and beauty of spiral formations and the simpler mathematics of the subject, the author urges that nature and art are never mathematical, yet he is ever in pursuit of "sequences of events" to which mathematical expression can be applied. Every department of knowledge has been laid under contribution; spiral nebulæ, clouds, and whirlwinds, crystals, screws, the "mirror writing" of Leonardo, spiral eddies in dust and smoke, upright and flat spirals in shells, all come in for comment; and spiral leaf arrangements, phyllotaxis, climbing plants, right-hand and left-hand spiral growth in plants, spirals in horns, and spirals in human and animal anatomy are discussed. Mr. Cook traces spiral decoration onwards from prehistoric times, through ancient civilisations to the modern era. Some principles of growth and beauty are lucidly explained by references to the works of Dürer, Dante, Leonardo, and Goethe, while in architecture the author finds a subject in which he delights to instruct us from an obviously first-hand and intimate acquaintance with the subject.

Mr. Cook has written this book with sincere conviction of the truth of his views, and while not agreeing with some of the deductions we most highly commend the exceedingly interesting, and in many cases unconventional, manner in which he has done his work. He has let in much light on obscure problems and added a fascination to the study of "spirality" in art and nature. To medical men Chapter XIII., on spiral formations in the human body, will prove particularly interesting and in some respects quite novel.

A Manual of Surgery for Students and Practitioners.

By FRANCIS T. STEWART, M.D., Professor of Clinical Surgery, Jefferson Medical College. Third edition. With 571 illustrations. London: J. and A. Churchill. Pp. 742. Price 16*s*. net.

THE text-books of surgery are becoming very numerous, and there must be one to suit every taste. The work before us can be safely recommended to the student, though in the endeavour to compress the whole of surgery into a comparatively small compass the author has found it necessary to give somewhat brief accounts of many operations. The descriptions, however, are sufficiently long for most purposes, and the fact that it has been found advisable to include an account of gynæcological surgery in the volume also leaves less room for other portions of the subject.

There are many parts of the book which are especially good. We may mention the account of the interpretation of skiagrams; and this is of great importance, for many surgeons do not grasp the fact that the method in which a skiagram is taken has an enormous influence on the appearance shown, so that in a fracture it is possible to make the fragments appear to overlap or to have an interval between them according to the relative positions of the tube, the limb, and the plate. We should have liked to have the evidence on which the author bases the opinion that the value of iodoform in tuberculosis is due to the fact that the iodine formed irritates the tissues and so gives rise to the formation of fibrous tissue. We cannot agree with the author in the statement that the pigment in a melanotic sarcoma is sometimes due to the decomposition of extravasated blood. It is true that hæmorrhagic pigmentation may be seen in a sarcoma, but that does not make it a melanotic sarcoma; the two conditions are absolutely distinct. It is curious to meet with the statement that venereal warts may occur "spontaneously." It is being generally recognised now that all warts are microbic in origin, and that they are never the result of mere irritation, and certainly never occur spontaneously.

However, these are small points. The net impression given by reading the book is that it is a sound, practical, and comprehensive guide.

LIBRARY TABLE.

Field Ambulance Notes. By Captain M. F. GRANT, R.A.M.C. London: Forster, Groom, and Co. 1914. Pp. 146. Price 2*s*.—This little book appears opportunely, when so many medical men are setting themselves to study, and carry out in actual practice, the work of the army surgeon in the field. No one without considerable experience can carry in his head the various points of detail in regard to transport, equipment, and procedure which it is necessary for every medical officer actively employed to be acquainted with. In this pocket-book will be found collected from various sources all that concerns the mobilisation, organisation, equipment, &c., of field ambulances, clearly set forth in a form suitable for reference. It is quite up to date. Territorial Force Regulations are quoted when necessary, and in the last chapter a summary is given of the field ambulance equivalents in foreign armies.

Physics. Third edition, thoroughly revised and amplified, and containing an entirely new chapter on the electron theory and radio-activity. By C. G. KNOTT, D.Sc. Edin., F.R.S.E. London and Edinburgh: W. and R. Chambers. Pp. 370. Price 7*s*. 6*d*.—This is an excellent text-book which should admirably fulfil its purpose; it is intended for the use of junior students, and more especially medical students in their first year of study. The issue of the third edition has given the author the opportunity of adding a new chapter on the electron theory and radio-activity, while the book throughout shows evidence of revision and amplification in accordance with modern developments. The subject is divided into two parts, the first of which deals with matter and energy, and the second with matter, ether, and energy. In the former are the subsections (*a*) properties of matter, (*b*) heat, and (*c*) wave-motion, and in the latter (*a*) electricity and magnetism and (*b*) radiant energy. This plan presents a clear division of the general subject according to modern acceptations. The book is clearly written, and the references "to familiar facts of observation and to experiments of the simplest character" make it a real educational aid to the reader studying physics for the first time.

Medical and Pharmaceutical Latin for Students of Medicine and Pharmacy. By REGINALD R. BENNETT. With an introduction by HENRY G. GREENISH. Second edition. London: J. and A. Churchill. 1914. Pp. 443. Price 6*s*. 6*d*. net.—The first edition of this book was reviewed in THE LANCET of August 4th, 1906, and we then took occasion to share the regret expressed by Mr. Greenish, who contributes the introduction, on the gradual abandonment of Latin as the language of prescription writing. The principal changes in the present edition consist in a careful revision and some rearrangement of certain sections, while more modern prescriptions have on occasion been substituted for older ones, and the vocabularies have been enlarged by the inclusion of recent terms of medical and pharmaceutical nomenclature. On p. 5 carbasus and alvus, two feminine nouns, are included without warning in the list of masculine nouns of the second declension, though the gender of both is given rightly in the Latin vocabulary.

Physical Chemistry, its Bearing on Biology and Medicine. By JAMES C. PHILIP, M.A., Ph.D., D.Sc. Second edition. London: Edward Arnold.

Pp. 326. Price 7*s.* 6*d.* net.—The importance of a knowledge of physico-chemical principles when dealing with great biological questions has become more and more obvious during recent years. The study of biochemistry has in fact become an essential in the medical curriculum, and considerable progress has been made in medical science by the application of physico-chemical principles. We have only to refer to a selection among the chapters in this useful book to find what an important bearing the subjects therein treated have on physiological processes. For example, we may mention osmotic pressure, permeability and impermeability of membranes, electrolytic dissociation, colloidal solutions, adsorption, and so forth. The story is set out just as it should be for students of medicine, who will find here clearly stated examples of the application of physico-chemical principles taken from the fields of biology, physiology, and medicine. This second edition brings the work up to date, as is evident from the references to recent work.

JOURNALS AND MAGAZINES.

Journal of Anatomy and Physiology. Conducted by Sir WILLIAM TURNER, K.C.B., Professor ALEX. MACALISTER, Professor ARTHUR THOMSON, Professor ARTHUR KEITH, and Professor ARTHUR ROBINSON. Vol. XLIX. Third Series. Vol. X., Part I. October, 1914. London: Charles Griffin and Co., Limited. Annual subscription 21*s.*, post free. —Two articles, both dealing with the descriptive anatomy of early human embryos, occupy most of the space in the present issue. The first of these, by Mr. H. L. Barniville, was carried out in Professor Wiedersheim's laboratory, and deals with an embryo of 8·5 mm. The paper is a remarkably exhaustive one and well illustrated, and it furnishes an extremely useful record of the condition of development at this stage. There are several points of special interest connected with Mr. Barniville's description of the organs and parts of this embryo. In particular we would note the suggestive condition of the cæcal region, and the bearing of the state of the parts upon the work of von Berenberg-Gossler, whose views the author adopts. The work is extremely thorough, and it is a little depressing to note how few British works are quoted in the copious bibliography. The second contribution to human embryology is by Professor David Waterston, and it deals with an embryo of 2·9 mm. This embryo is at an interesting stage of development, and the description makes a good landmark in the progress of formation of human organs. Professor Waterston lays special emphasis upon the heart and pericardium, and for the other systems he gives a summary of the conditions met with. These two papers make interesting reading when taken side by side, and the reader will find much to arrest his attention and compel thought. We note that Professor Waterston estimates the age of his embryo at somewhere near 30 days, while Mr. Barniville places his at 35.—Dr. J. S. B. Stopford contributes a paper upon the Supracondyloid Tubercles of the Femur. The communication points out the precise origin of the medial head of the gastrocnemius. The paper was wanted, for there is much incorrect teaching at present upon this point.—Professor J. A. Pires de Lima, of Oporto, describes a case of Bifid Penis with Penial Hypospadia. The case is not a common one and is of interest. The explanation of its development as given by the author is obviously the true one.—Mr. J. Wilfrid Jackson discusses the Dental Mutilations in Neolithic Human Remains. The neolithic skulls he describes are those discovered by himself in Dog Holes, Lancashire. The mutilation consists in the removal of upper central incisors and lower second premolars, practices very similar to those indulged in by many races to-day.

Malaria e Malattie dei Paesi Caldi. Anno V., Fasc. IV. August 20th, 1914. Rome: Via Farini 62.—This number contains a further communication by Professor Tizzoni and Dr. A. de Angelis on the Streptobacillus of Pellagra in which they explain the reason of the polymorphism shown by this organism previously described by them, and prove the relationship between it and the lower hyphomycetes. Dr. A. Gasbarrini gives his experiences of the Wassermann reaction in cases of malaria. He examined 43 cases, and obtained a positive result in 18·6 per cent. The reaction generally disappeared a few days after the defervescence of fever, but its intensity had no relation with the presence and variety of the plasmodia circulating in the blood nor with their number. In latent malaria the reaction was always negative.—Dr. F. Scordo discusses the nature of certain granular bodies recently described by Wenyon in kala-azar. He is of opinion that since these bodies are often absent in cases of typical Leishmaniosis, their appearance may be due to a collective degeneration of the parasites caused by some hitherto unknown reason.—Professor Ilvento and Dr. Mazzitelli describe the cases of plague treated at Tripoli from June to September, 1913. Under the heading Pesticæmia are the cases of two infants at the breast of plague-stricken mothers, one of whom died. The sudden and unexpected death of the children without any apparent lesion excited suspicion, and blood obtained by aspiration from the heart of the corpse gave positive microscopic and cultural evidence of Yersin's bacillus. With regard to therapeutic measures intravenous injections of corrosive sublimate were used in three cases without appreciable advantage. Subcutaneous injections of electrargol were resorted to in five cases and were followed invariably by an improvement in the general symptoms. The last 17 cases were treated by peribubonic injections of solution of iodine 1 centigramme in 2 cubic centimetres of solution of iodide of potassium, four subcutaneous doses of half a cubic centimetre being given daily. While intraglandular injections of iodine aggravated the local and general symptoms, this periglandular treatment, combined with the application of ice, was well tolerated. All the cases thus treated, even after the appearance of grave initial symptoms, exhibited a rapid improvement in general symptoms and abortive febrile course.

The Dental Record.—The November issue contains a paper on the Treatment of Root Canals, by F. D. Lamb. The author considers that many of the unsuccessful results are due to lack of care in carrying out the cleansing and filling of the canals. He discusses in a critical manner several of the methods usually adopted. There is a translation from *La Revue de Stomatologie* (April, 1914) of a paper by Pierre Robin, on the eruption of the deciduous and permanent dentition. A graphic table is given, but the data are open to criticism. An account is given of an unusual type of maxillary cyst arising in connexion with the left permanent canine, the root of which had pierced the floor of the orbit.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Nov. 19th, Sir Francis H. Champneys being in the chair. A letter was considered from the clerk to the guardians of the Walsall union with regard to the resolution of the Board refusing to admit to examination a candidate who had tendered a birth certificate which had been tampered with. The Board directed that the clerk to the guardians of the Walsall union be informed that the Board regrets that it is unable to condone the serious offence of which the candidate has been guilty. It is willing, however, to allow her to apply again in October, 1915, on forwarding evidence satisfactory to the Board that she appreciates the gravity of her offence and is resolved to behave honestly in future. A letter was considered from the clerk of the Bucks county council asking whether the local supervising authority has any jurisdiction over a certified midwife when acting in the capacity of a nurse under a medical practitioner in attendance on a confinement. The Board decided that the clerk of the Bucks county council be informed that a midwife acting only as a nurse is amenable to the Act and also to some of the rules (e.g., Rule E.5), but not to all. A letter was considered from a certified midwife, who was approved by the Board at its last meeting to undertake the training of pupil midwives, asking whether the qualifying 15 lectures may be spread over a period of seven weeks only. The Board directed that the approval of this midwife be suspended until the Board has satisfied itself that she knows and is prepared to carry out the rules of the Board.

# Reports and Analytical Records
FROM
THE LANCET LABORATORY.

1) "TABLOID" HEXAMINE; (2) "TABLOID" SODIUM ACID PHOSPHATE.

(BURROUGHS WELLCOME AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

1. Hexamine is the name now officially given to hexa-methylene-tetramine in the new British Pharmacopœia. It is accepted as a useful diuretic, uric acid solvent, and antiseptic. The above firm actually manufacture the substance at their works at Dartford, Kent, and the refined product answering the official tests of purity is issued in tabloid form containing either 3 or 5 grains of hexamine. 2. The tabloid sodium acid phosphate is designed for use in conjunction with hexamine, the activity of which it encourages by increasing the acidity of the urine. The combination is thus useful in the treatment of cystitis, gonorrhœa, and other infective diseases of the genito-urinary tract.

JEYSOL.

(JEYES' SANITARY COMPOUNDS COMPANY, LIMITED, 64, CANNON-STREET, LONDON, E.C.)

This is a well-prepared combination of fatty acids and alkali with powerful germicidal tar acids. It is perfectly clear and mixes in all proportions with water, forming an alkaline bright solution. We found approximately 50 per cent. of tar acids present, and according to their iodine value it is obvious to us that very effective tar derivatives (from a germicidal point of view) have been used for the purpose. In other words, the chemical indications are in favour of a satisfactory carbolic coefficient, having regard to the fact that the preparation mixes perfectly with water and does not form an emulsion. Its cleansing and detergent properties should render it of particular value in surgery, while in convenient dilutions it may be used with good results in the treatment of infective throat troubles.

HÆ-MO-PHOSPH.

(THE HÆ-MO-PHOSPH MANUFACTURING COMPANY, SHELTON, STOKE-ON-TRENT).

Hæmophosph is a dark brownish-red somewhat viscid fluid which on analysis shows distinctly the presence of hæmoglobin and of coagulable albumin. Clinical reports appear to have established the value of this preparation as a hæmatinic. Shortly, it may be described as a tonic food of service in enfeebled conditions. According to our analysis it contains 23·81 per cent. of solid matters, and mineral matter 1·48 per cent. On heating the fluid coagulation of the albumin results, and we find that this amounts to 18·71 per cent. A dilute solution of hæmophosph when examined spectroscopically showed the well-known absorption bands of hæmoglobin.

OXFORD MARMALADE.

(FRANK COOPER, OXFORD.

We may accept the assurance that this marmalade is prepared with care and made from superior materials inasmuch as it is of attractive consistence and the flavour of the Seville orange is well preserved. Its dark colour is due no doubt to considerable boiling. Those who make marmalade at home as a rule forget that a superior product is always obtained by prolonged boiling. We examined the marmalade for objectionable preservatives, but with negative results. Analysis gave the following figures: total sugar, 55·55 per cent.; moisture, 38·59 per cent.; orange skin tissue, 5·53 per cent.; mineral matter, 0·33 per cent. Marmalade is a favourite adjunct at the breakfast table, and there is no doubt of its wholesomeness.

ANTISEPTIC WATERPROOF MATERIAL.

(JAMES SPICER AND SONS, 50, UPPER THAMES-STREET, LONDON, E.C.)

Our attention has been called to this material as likely to supply a demand at the present crisis for an economical waterproof material for bandages and bedsheets in the place of oil silk and rubber fabric. We have examined this material and are able to confirm the claims made in regard to it. It appears to be ordinary wrapping paper made waterproof by a film of waxy material. On steeping the paper in alcohol the waterproofing substance is removed. The material is not damaged, we find, by the ordinary fluid antiseptics used in surgery, but iodine leaves an apparently indelible stain. We certainly agree that this material would be of great service, especially at a time of colossal necessity.

TOXOL.

(MESSRS. BOOTS, STATION-STREET, NOTTINGHAM.)

Toxol is a clear dark brown fluid representing a careful combination of cresols with oil soap. We separated the cresols from the soap by means of the baryta method and the yield was approximately 55 per cent. of cresols by volume. The cresols chosen for the preparation are evidently of high germicidal power, judging from their chemical characteristics. The iodine combination value indicated a carbolic coefficient of at least three. The preparation should be of service where an efficient disinfectant as well as detergent is required.

HOOKER'S MALTED MILK.

(THEW, HOOKER, AND GILBEY, 6, HOLBORN VIADUCT, LONDON, E.C.)

The effect of the enzymes of malt upon milk in rendering it decidedly more easy of digestion is very evident in this preparation. The dry powder forms with water a regular emulsion with a milky appearance, the fat thus being evenly distributed. On adding acid to the fluid a copious coagulation of casein takes place, but it does not separate in curds but in fine particles. This is a valuable characteristic in infant feeding. According to our examination the preparation still shows enzymic activity and is quite free from starch. Its flavour is pleasantly malty and milky. Our analysis was as follows: Moisture, 1·50 per cent.; mineral salts, 3·50 per cent.; maltose and lactose, 55·80 per cent.; dextrine, 16·00 per cent.; protein, 14·00 per cent.; and fat, 9·20 per cent. From these figures it will be seen that this preparation furnishes a complete food which, owing to its careful method of production, is readily assimilated. Over 80 per cent. of the preparation is soluble in warm water.

HETROFORM.

(CHARLES ZIMMERMANN AND CO. (CHEMICALS), LIMITED, 9 AND 10, ST. MARY-AT-HILL, LONDON, E.C.)

Hetroform is described as an improved urinary antiseptic. It is, in fact, a compound of hexa-methylene-tetramine with benzoic acid. The object of such a combination is obvious, for in the urinary passages both antiseptics, formaldehyde and benzoic acid, are slowly set free. Further, the urine assumes an acid reaction.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL MEETING OF FELLOWS AND MEMBERS.

THE thirtieth annual meeting of Fellows and Members of the Royal College of Surgeons of England was held at the College, Lincoln's Inn-fields, W.C., on Nov. 19th. Sir W. WATSON CHEYNE, the President, took the chair, and was supported by Sir Frederic Eve, senior Vice-President, Sir Rickman Godlee, the late President, and 4 other members of the Council. There were also present 6 other Fellows and 41 Members.

The PRESIDENT placed before the meeting the annual report of the Council for the year ending August 1st, 1914, which was reviewed in THE LANCET of Oct. 31st, and stated that copies had been circulated to 951 Fellows and 2629 Members. He briefly indicated some of the main features in the report, and answered certain questions put to him by Dr. Sidney C. Lawrence, honorary secretary of the Society of Members of the Royal College of Surgeons of England.

Sir VICTOR HORSLEY then moved the following resolution standing in his name:—

> That this thirtieth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council of the College, which as now constituted only represents those Members who also hold the Fellowship, and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation.

Sir Victor Horsley blamed the Council for its contemptuous indifference to the repeated demand for representation by Members expressed at previous annual meetings, and criticised generally the policy and attitude of the governing body of the College.

Dr. GEORGE JONES, barrister-at law, who seconded the motion in a persuasive speech, urged the Council to look ahead and make friends now with the large body of Members, so that it might have behind it their support in dealing with the difficult questions which the future held in store. He referred in particular to the growing competition by provincial universities, and concluded by advising the Members to make their watchwords in the struggle for regaining their right of representation, "educate, agitate, organise."

Among those who also spoke in favour of the resolution were Mr. W. J. MIDELTON, who deplored the breach which he said existed between Fellows and Members of the College; Mr. J. BRINDLEY-JAMES, who offered a hearty personal welcome to the new President; Dr. SIDNEY LAWRENCE, who referred to the satisfactory progress made during the past year by the Society of Members; and Mr. J. G. FITZGERALD.

After Sir VICTOR HORSLEY had briefly replied to the discussion, the resolution was put to the meeting and declared carried *nemine contradicente*, and the proceedings closed with a vote of thanks to the President, carried with acclamation.

ASYLUM REPORTS.

Hereford County and City Lunatic Asylum (Annual Report for the Year 1913).—The total number of patients under treatment during the year was 566, the average daily number being 502. There were 58 direct admissions. The chief causative factor was alcohol in 7 cases, syphilis in 6, and insane heredity in 6. There was no case of general paralysis. The number of discharges was 25, with a recovery percentage of 35·4 on the total admissions. Mr. C. S. Morrison, the medical superintendent, remarks that many of the patients under treatment during the year would undoubtedly have derived benefit from open-air treatment on verandahs, if such conveniences had been available. The deaths numbered 23, the mortality based on the average daily number resident being 4·6 per cent., as against 8·7 last year. Pulmonary tuberculosis was responsible for 5 deaths, and Mr. Morrison states that tuberculous disease is much too prevalent, and that provision of recognised means for treatment and to reduce the risks of infection should not be long postponed. He also notes the rise in the weekly cost from 8*s*. 9*d*. per head in 1909 to 10*s*. 6*d*. in 1913. This is due to many factors which influence the expenditure in public institutions. The general sense of the community is directed towards levelling up institutions to a standard giving larger benefits to employees, and better differentiated care to those deriving advantage from the provision of such institutions. The increasing cost of necessaries and the advance in wages add their quota annually to the general rise.

Baldovan Institution (near Dundee) for the Treatment and Education of the Feeble-minded (Annual Report for the Year 1913).—The number of children who passed through the institution during the year was 240. There were 42 admissions and 15 discharges. The deaths numbered 17. The causes of death were in 2 instances epilepsy, in 2 tuberculous disease, in 2 pneumonia, in 1 asthenia, and in 1 scarlet fever and epilepsy. Of the 208 children resident, 82 attended school and received there teaching fitted for their several requirements. A new departure has been made which will permit of some 14 boys working at joinery. Plans have been made during the last few years for the removal of the more educable children from among the more degenerate. With this end in view alterations and rearrangements of the buildings have been carried out which give increased accommodation and make supervision easier. It is now possible to effect a complete separation between those who can only be nursed and those who are capable of being taught.

THE Chelsea Hospital for Women has received from the executors of the will of the late Mr. Thomas Stephen Whitaker the sum of £2000 towards the rebuilding of the hospital.

DORSET MEMORIAL TO THE LATE KING.—A meeting was held at Dorchester recently in connexion with the Dorset King Edward Memorial Fund, under the presidency of Lord Ilchester. The sum of £1610 has been raised, and it was decided to invest this and divide the interest between the Dorset County Home for Nurses and the Dorset County Nursing Association.

THE VENICE MEDICAL POST-GRADUATE COURSE.—The Medical Association of Venice has announced the suspension of the post-graduate course usually held in the month of November. The grounds given are the uncertain conditions in which the medical profession finds itself at present owing to the political situation, and the hope is expressed that it may be possible to hold the course next spring.

ROYAL SUSSEX COUNTY HOSPITAL.—Additional open-air balconies have been added at the Royal Sussex County Hospital at Brighton, the latest additions to the septic wards of the York block being erected by the generosity of Major-General Marsland. The balconies are on two floors, the upper one being used for female and the lower for male patients. The cost of erection was over £600. The balconies were formally opened on Nov. 11th, Dr. W. Furner, on behalf of the medical staff, expressing the deep appreciation of the generous gift.

EAST SUSSEX AND THE MENTALLY DEFECTIVE.—The committee dealing with the mentally defective in East Sussex has presented a scheme to the county council for providing an institution for women and girls, and boys under 12, at an initial outlay of £4550. Mainly on account of the growing expenditure in other directions and the war, the scheme was strongly opposed and was thrown out by 34 votes to 7. The proposal provided for the reception of 100 patients, whereas the committee at the present time has only six cases, for the placing out of which it is paying 10*s*. 6*d*. a week per head.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 28, 1914.

The War and the Standard of Medical Education.

THE General Medical Council are sitting this week at their 100th session, and Sir DONALD MACALISTER, in referring to the fact in his presidential address, said that if the meeting had been held in different historical circumstances he might have been tempted to improve the occasion by offering some reflections on the past history of the Council, but that he would refrain because the new history that was in the making was too urgent to leave room for indulgence in such retrospect. The rest of his interesting address was largely occupied in demonstrating the active part which the Council had taken in meeting the national emergencies that have arisen, and that will arise, in connexion with the civil and military medical service during the war—emergencies that must affect the medical profession deeply, as they have a direct bearing upon its numerical strength, as they may prejudice its ordinary work as guardians of the health of the population at large, and as, if care be not taken, they may influence for the worse the standards of scientific education.

Sir DONALD MACALISTER dealt with the last of these points first, and alluded to communications which had been received by the Council from various professional authorities inquiring as to the propriety of modifying or suspending some of the existing regulations in the case of students whose regular course of study for a medical qualification might be interrupted by reason of military service. As it was known that some of the licensing bodies proposed to hold special examinations to meet the case of candidates who had completed the curriculum and were desirous of offering themselves without delay for medical military service, it is obvious that the Council was invited to deal here with a situation which might imply some lowering of the standard of proficiency among qualified men, the maintenance of which is one of the great statutory duties of the Council. The Council met the situation with firmness and discretion, and with what we may describe as a military grasp of the situation, refusing to make everything easy for everybody because the country was at war. Exactly as the military authorities will not admit to the terrible responsibility of meeting the enemy in the field, men who have not undergone adequate training for the task, so the General Medical Council set its face from the first against any lowering of the tests for admission to the roll of qualified men, lest the care of the soldier in his sore need, or of the civil population, should fall into insufficiently instructed hands. While recognising that there was a very distinct call, the call of the national need, for a number of young qualified medical men, the Council has insisted also on the paramount necessity in the public interest of maintaining unimpaired the due standard of efficiency required of all who seek enrolment upon the Medical Register with the status and privileges which follow thereon. The Council formulated recommendations as a guide to the various licensing bodies with regard to modifications of the curriculum, so that the course of training might be speeded up, and these bodies have one and all given effect to the views of the Council by regulations of their own.

With regard to the number of medical men who have offered themselves for service under the Crown either in this country or with the Expeditionary Forces, no certain figure is available, but it is known that the number is a very large one, and that there are a great many medical men whose offers of service have not as yet been accepted, the difficulty being to allot them exactly in places where their assistance is most required. We all of us hear both sides of this matter, and know that the military authorities on the one hand are seeking particular medical officers to be employed in one direction, while medical men hoping to serve their country in other than these capacities have been disappointed, but this situation is, we believe, gradually disappearing. A difficulty has also arisen with regard to those medical men who are with the colours. The depletion of the staffs of the general hospitals of the country all over the kingdom has been marked owing to the mobilisation of the Territorial Forces, while the dislocation of private practice following upon the same cause remains grave; indeed, if the public health of the country just now were not good the situation would be one of considerable anxiety. The subject is briefly touched upon by Sir DONALD MACALISTER in his address, and has several times been alluded to in these columns, where we have announced our belief that this position, being now appreciated by the War Office, will be met by simpler methods of adjustment. The efforts of Sir DONALD MACALISTER in this direction have been strenuous, and now that the first pressure of military and general organisation has been met they should bear fruit. In the meantime, although it is many of our own readers whom we are praising to their faces, we think it right to call attention to the fine and generous spirit towards each other which medical men all over the country have shown in dealing with the problems arising out of the compulsory desertion of practices. On all sides we find a desire among the practitioners remaining behind to maintain and protect the interests of their absent colleagues.

Enteric Fever Prevention in Civil and Military Life.

IT has been said, to emphasise a sanitary moral, that it is fortunate for this country that neither bacillus carriers nor antityphoid vaccine were discovered earlier than they were. Enteric fever prevalence in the United Kingdom has been steadily falling for the last 50 years, and is now only about an eighth of what it was in the "seventies" of the last century. This reduction has been partly secured by greater attention to prophylaxis in respect of the sick persons themselves, but is chiefly to be attributed to wider measures of "sanitation." These measures are not directed against known enteric fever infection as such, but aim at the removal of excremental contamination of water, food, and soil, however this may occur, regardless of the question whether the contamination is from healthy persons, from enteric fever cases, or from carriers of the typhoid bacillus. Dangerous water-supplies, cesspools, privies, unpaved yards, sewage-polluted shell-fish and foods, and a host of other matters coming within the purview of general sanitation, have been dealt with principally on account of their proved association with enteric fever, to the great benefit of the community in many directions besides the diminution effected in this one disease. On the other hand, the "new" methods against enteric fever adopted in other countries which are less advanced in general sanitation are more specific and depend primarily on bacteriological methods enabling the individual enteric fever case or typhoid carrier to be detected and controlled. Such methods have been applied abroad with great thoroughness and success, the most conspicuous example being the great "antityphoid" campaign conducted in recent years in Alsace, but we have no hesitation in regarding our own as the better way.

At home the mischief done by the individual carrier is occasionally serious and perhaps enough to warrant restrictive measures being taken in exceptional cases against particular individuals; but such action under normal conditions of civil life should be only incidental and subsidiary to the general methods which have been so fully justified by experience. In camps and armies on service, however (as Sir WILLIAM OSLER insisted in his recent address to the Society of Tropical Medicine), the several methods of prophylaxis assume different relative values, particularly when the country in military occupation is one in which enteric fever is normally endemic. The conditions of active service in which disastrous results might follow from infection by incipient cases of enteric fever or by the presence of carriers among the troops can easily be apprehended. Medical opinion is thus practically unanimous that every soldier on service ought to obtain the effective protection which antityphoid inoculation can give, and supports any precautions which are practically feasible for the elimination of the carrier from our armies. It should, however, go without saying that reliance on antityphoid inoculation and other new measures ought not to involve any slackening in the efforts to secure good general sanitation for the troops. Apart from the consideration that the duration of the protection conferred by the inoculation is relatively transient, the general measures of good military hygiene not only give protection against enteric fever, but also have a much wider influence on the health of the soldier. In our home camps and billets there is no essential reason, if proper care be taken, why troops should be any more exposed to the results of excremental contamination of water, food, or soil than was the case when the same men were in civil life. Even if every soldier were inoculated against typhoid infection, sanitary organisation would still need to be encouraged to the utmost in our new armies, and education in personal hygiene and methods of cleanliness must continue to be regarded as among the most important parts of the military training of our troops.

Annotations.

"Ne quid nimis."

THE MEDICAL INSURANCE AGENCY.

AN interim report on the progress of the Medical Insurance Agency for the nine months ending Sept. 30th was presented by the chairman, Dr. G. E. Haslip, to a meeting of the committee on Nov. 5th. The Agency had, he stated, not escaped the effects of the war, the receipts for new life and motor-car business especially having been adversely affected, although the commission on life business effected antecedent to the war had very nearly doubled during the period under review. On the other hand, a substantial business in war risks had been negotiated, and had helped to make good any shrinkage in other classes of business. The surplus shown by the auditor's figures would, the chairman said, justify the distribution to medical charities of the sum of 300 guineas for the current year, and it was resolved accordingly to make contributions to the Royal Medical Benevolent Fund (100 guineas), the Royal Medical Benevolent Fund Guild (50 guineas), Epsom College Benevolent Fund (75 guineas), the Royal Medical Benevolent Fund Society of Ireland (25 guineas), THE LANCET Editor's Fund (15 guineas), the Royal St. Anne's School (10 guineas), and, provisionally, to the fund for distressed Belgian medical men (25 guineas). The subscription to the Royal St. Anne's School was made with the specific object of assisting daughters of medical men in obtaining election to that school. Altogether the Agency since it was instituted has voted a sum of £1075 to medical charities, and, in addition, it has returned to insurers a sum of over £3000. The Agency is prepared to undertake to arrange policies for insurances of all kinds, and from the experience already gained it is able to advise medical men as to the best form of policies, and as to their satisfactory adjustment to meet the varying needs of individuals. Further particulars can be obtained on application to the agent and secretary, Medical Insurance Agency, care of British Medical Association, 429, Strand, London, W.C. The committee of management consists of Dr. G. E. Haslip (chairman), Dr. Alfred Cox, Mr. Guy Elliston, Sir Frederick Hewitt, M.V.O., Dr. H. A. Latimer, Dr. J. A. Macdonald, Dr. D. J. Mackintosh, M.V.O., Mr. H. Betham Robinson, M.S., Dr. S. Squire Sprigge, and Dr. Dawson Williams.

MYELOID SARCOMA.

IN another part of this issue of THE LANCET is published an important paper on myeloid sarcoma by Dr. Matthew J. Stewart, of Leeds. This remarkable new growth has received no small degree of attention during the last few years, and it has formed one of the main topics in a discussion on sarcoma at the Royal Society of Medicine.[1] The point in which this variety of tumour differs from all other forms of sarcoma is its very low degree of malignancy. All other varieties of sarcoma are very malignant, and especially malignant are the sarcomata of bone; the myeloid sarcomata have hardly any malignancy—in fact, it is not going too far to say that they are not malignant at all. They never affect the neighbouring lymphatic glands, yet this may also be said of some other kinds of sarcoma. More important still is the fact that the myeloid sarcoma never in any circumstances gives rise to secondary growths in other parts of the body, though with ordinary sarcomata of bone death is nearly always due to the formation of secondary growths. Indeed, it is only from the fact that the myeloid sarcoma has a tendency to recur locally that it can be said to be malignant at all, but this local recurrence means nothing more than that it has not been completely removed. It is certainly not encapsuled, and there is no sharp dividing line between the growth and the surrounding tissues. Yet in numberless instances recurrence has not occurred after the local removal of a myeloid sarcoma, and even when a recurrence has taken place a second attempt at removal has generally succeeded. Clinically, therefore, the myeloid sarcomata behave very differently from the other new growths with which they are usually classed; they are for all practical purposes non-malignant tumours. This difference has been so keenly felt by some pathologists that they have preferred to call the myeloid sarcoma by a name which would not suggest any relation to the sarcomata, and so the word myeloma has been widely employed. With the name of myeloma, however, Dr. Stewart cannot agree. He acknowledges that clinically these growths are different—that they do not act like malignant growths, but he feels compelled to class them as embryonic connective tissue growths, and therefore he says that they must be sarcomata, and not unaptly he points out an analogy in the position of rodent ulcer in the carcinomata; it is certainly a carcinoma, but clinically its malignancy is very slight. The claim that a myeloma is a sarcoma depends then on its histological structure, and not on its clinical characters, and it is to the histology of these growths that Dr. Stewart's paper is chiefly devoted. While pointing out the resemblances between the myeloma and the other sarcomata, he shows that it is always possible by the microscope to distinguish easily between the myeloma and the malignant giant-celled sarcoma, which at the first glance resembles it. He shows that in the myeloid sarcoma the nuclei are numerous, uniform, small, and without mitoses; while in the malignant giant-cell sarcoma the nuclei are few, irregular, and large, and mitotic figures are common. On the certainty of the value of this histological difference depends the importance of this study; for on the microscopic characters depends the treatment. In a definite myeloid sarcoma the surgeon may with confidence practise free local removal; and the results of the examination of the cases which Dr. Stewart has studied and in which local removal has been performed show that of 40 cases traced 38 are alive at the present time, and that in one only of these is there local recurrence. Dr. Stewart's paper is a careful study of an important subject, and it will afford valuable support to the growing practice of the local treatment of myeloid sarcomata.

"NOSTALGIE MILITAIRE."

NOSTALGIA as a specific disease especially afflicting recruits has never figured in English text-books of medicine or mental disease, but our French allies had up to about the year 1877 issued a whole literature on the subject. Switzerland, as we are informed by Jean Jacques Rousseau, was the original home of what was long regarded as a dangerous malady. The Swiss, he asserts, were forbidden to listen to the music of the Ranz-des-Vaches if it happened to be played to them when on the march, since the monotonous strains, associated in their minds with home and the mountains, led to desertions, sickness, and death. Johannes Hofer, a Mulhouse physician, is perhaps the original authority on *mal du pays*, which he calls "pothopatridalgia." His book was published in Basle in 1688. He speaks of a specific disease, tells many stories of its extraordinarily fatal results, and transcribes in quaint notation the music of the Ranz-des-Vaches, or Kuh-Reihen, to the sound of which he directly traces his "pothopatridalgia." As years pass the picturesque element in home sickness becomes modified, and in 1837 we find the subject treated at great length and with a complete appearance of scientific justice by Paulinier in a Montpellier thesis. He describes the pallor, taciturnity, absolute dejection, loss of appetite, and so forth, which attack the recruit suffering from home sickness, and adds the curious observation that in the great wars of the French Republic the illness was unknown owing to the enthusiasm of the soldiers for France, every inch of which had become home in their regard. Later, when the Napoleonic wars had sapped the vitality of the nation, the condition of *mal du pays* became almost epidemic among the boy recruits of 1812 and the following years. There is little to choose between Paulinier's views and those of many of his successors. They all describe much the same set of symptoms. Writing as lately as February, 1863, an American army surgeon, De Witt C. Peters, speaks of the incidence of this form of melancholia among young recruits drawn from the Eastern States of the Union and sent to fight in the, to them, enervating climate of the south. "The hospitals of New Orleans," he says, "during the past summer were filled with such cases. ...... The majority of them were young men from the Eastern States, whose love of home and kindred is a characteristic trait." His definition of the symptoms tallies with that of his predecessors.

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[1] THE LANCET, Nov. 16th (p. 1362) and 23rd (p. 1435), 1912.

"The symptoms produced by this aberration of mind are, first, great mental dejection, loss of appetite, indifference to external influences, irregular action of the bowels, and slight hectic fever. As the disease progresses it is attended by hysterical weeping, a dull pain in the head, throbbing of the temporal arteries, anxious expression of the face, watchfulness, and increased fever and wasting. Among young prisoners of war it is the worst complication to be encountered, as the writer can truthfully affirm." We can only trust that as our allies and ourselves are fighting with high hopes in an inspiring cause such a form of mental depression is unknown or rare among them. The Italians speak familiarly of nostalgia as a disease of recruits.

DUODENAL ULCER IN INFANCY.

DUODENAL ulcer has rarely been observed in infancy. An American writer, Holt, recently could find recorded only 91 cases in the first year of life, to which he added four cases from a total of 1800 necropsies at the Babies' Hospital, New York. In the *American Journal of the Medical Sciences* for November Dr. B. S. Veeder has published an important paper on the subject based on the experience of the Department of Pediatrics, Washington University Medical School, and the St. Louis Children's Hospital. His statistics indicate a greater frequency of duodenal ulcer in children than those given above. During the last two years five cases were observed in one hospital in St. Louis. From the pathological standpoint the condition was found four times in 62 necropsies on infants under one year. From the clinical standpoint it was diagnosed four times among 586 admissions to the infant ward and 2000 infants under 1 year treated at the out-patients' department. The following is an example. A female, aged 1 month, was admitted on March 20th, 1912. She was born at term, was breast-fed for two weeks, and then fed on condensed milk, 1 in 16. This was well taken for two weeks, but then was refused, and the stools became loose and watery. Two hours before admission she was put on barley water, which was refused. On the day of admission she passed four loose mucous stools and vomited once. Milk diluted with three parts of water and protein milk were tried without benefit. On March 30th black granular material was vomited, and soon afterwards a tarry stool was passed. The temperature remained continuously subnormal, but there were no signs of collapse. Duodenal ulcer was diagnosed. Two days later more tarry stools were passed. She gradually became weaker and died on April 5th. The necropsy showed an irregular ulcer measuring 7·5 by 5 mm. on the posterior wall of the duodenum just beyond the pylorus. The margins were elevated and undermined. Near this ulcer was another 3 mm. in diameter. The ulcers extended through the mucosa and submucosa, and their bases were covered with greyish slough. In 4 out of the 5 cases there was a fairly typical picture of duodenal ulcer from which the diagnosis could be made, and it was confirmed by necropsy in 3 which were fatal. All the infants were under 6 months and were artificially fed and marasmic, but 3 had received a fair start on breast feeding. Vomiting occurred in all the cases and was a marked feature in 3. Melæna was present in 4 cases. In the absence of the subjective symptoms, which are so important in the adult, the diagnosis depends upon the few objective symptoms given above. Gross hæmorrhage from the bowel is the only definite symptom pointing to duodenal ulcer; when absent the diagnosis cannot be made. Acute ulcerative conditions of the lower intestine must be excluded, but these are usually associated with acute nutritional disturbances. The prognosis is unfavourable because of the age of the patients and the associated chronic malnutrition. As to the treatment, the only indication is to place the infant under the best nutritional conditions, which means breast feeding. The pathology is obscure. The ulcers may be single or multiple. They vary from small areas of superficial necrosis to punched-out ulcers involving all the intestinal coats, and in a few cases causing perforation. They are found between the pylorus and the ampulla of Vater, most commonly just beyond the pyloric ring. In practically all the cases they were on the posterior wall. This seems to be due to the fact that such position is the most dependent part of the duodenum when the infant is on its back, and therefore the place where any substance acting on the mucosa would be most likely to produce an effect. The ulceration appears to be in some way due to intestinal decomposition. This is most common in the early months of infancy, and most of the subjects were in the first five months of infancy.

NON-TUBERCULOUS LESIONS OF THE PULMONARY APEX.

As comparatively little attention has been given to disease of the apex of the lung which cannot be attributed to tubercle, we welcome a communication on this subject made by Dr. L. Devoto to the Twenty-fourth Italian Medical Congress at Genoa last month and reproduced in a recent number of *Il Morgagni*. The author first draws attention to cases which simulate a morbid condition of the apices which really does not exist. For example, in young children a limited and persistent unilateral dulness is often found, leading to the suspicion of tuberculosis of the apex or tracheo-bronchial glands. Such dulness, however, is due to changes in the bony thorax, and particularly to slight deviations of the vertebral column, or to abnormal length of the apophysis of the cervical vertebræ. Moreover, it is not unusual to meet with patients who for some months present a subfebrile temperature of uncertain origin. With the idea of tubercle present it requires care and judgment to avoid an error in diagnosis. By violent coughing and forced respiration it is easy to provoke the formation of a râle, especially if the examination be made in the morning after the patient has remained for a considerable time in a supine posture in bed. It is, moreover, stated that in the course of chronic appendicitis moist sounds may be heard at the apices, which disappear when the local process becomes more marked. Then there are the chlorotic girls, with slight dulness at one apex, a harsh vesicular murmur, prolonged expiration, loss of flesh, and debility, who are sent to the sanatorium only to be dismissed after a short time because the physical signs at the apex have no relation with tubercle but with the asthenia of chlorosis. Having cleared the ground of what might seem to indicate, owing to errors of observation or interpretation, a diseased condition of the apices, the author enters upon apical pathology properly so-called. Among primary conditions of the apex which are not tuberculous he draws attention to apical pleurisy, either dry or with serous or purulent effusion, simple bronchial catarrh, bronchiolo-alveolitis and peribronchitis from inhalation of dust, bronchopulmonary foci occurring as sequelæ of influenza, whooping-cough, diphtheria or typhoid fever, pneumonomycosis, new growths and gummata, abscess, and bronchial concretions. Passing on to secondary affections of the apex, the author notices that physical signs of collapse at the right apex are met with in persons suffering from diseases of the upper air-passages, and that in aged people with torpid circulation a diminution of resonance and moist sounds are found at one or both apices. Similar conditions, the result of toxæmia or weakened circulation, are found in uræmia, diabetes, polysarcia, and in the course of severe nephritis, in the induration following an apical pneumonia and pulmonary infarcts. In the majority of cases non-tuberculous lesions of the apex can be clearly recognised. If by modern methods of investigation the non-tuberculous origin and nature of an apical lesion cannot be demonstrated, a tuberculous process is to be suspected, even if search for the bacillus and other special investigations give negative results. But this contingency of having to admit the tuberculous nature of a lesion by a process of exclusion is so rare that a diagnosis of tubercle arrived at by this means will be justified by the consideration that, within certain limits, diagnosis in excess is less prejudicial than diagnosis in default.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

A MEETING IN LONDON.

A MEETING of the committee to organise a Relief Fund for Belgian Doctors and Pharmacists was held at the offices of the British Medical Association on Tuesday afternoon, Nov. 24th. The meeting arose out of invitations sent by the previously existing provisional committee, in order that it might transform itself at the first opportunity into a really representative body, which should give its influence to the movement to relieve in some way the misery of the Belgian doctors and pharmacists. The following were present:—

*Sir Rickman Godlee, Bart., in the Chair.
Sir Donald MacAlister, K.C.B., President of the General Medical Council.
Sir Henry Morris, Bart., Joint Treasurer of the General Medical Council.
*Sir Thomas Barlow, Bart., President of the Royal College of Physicians of London.
*Sir W. Watson Cheyne, Bart., President of the Royal College of Surgeons of England.
*Mr. Meredith Townsend, Master of the Apothecaries' Society of London.
Sir John W. Moore, late President of the Royal College of Physicians of Ireland.
Mr. James Hodsdon, President of the Royal College of Surgeons of Edinburgh.
Sir Lambert H. Ormsby, late President of the Royal College of Surgeons in Ireland.
*Dr. Frederick Taylor, President of the Royal Society of Medicine.
*Mr. W. J. Uglow Woolcock, Secretary and Registrar of the Pharmaceutical Society.
Sir Clifford Allbutt, K.C.B., Professor of Medicine in the University of Cambridge.
Sir Thomas Fraser, Professor of Materia Medica and Clinical Medicine in the University of Edinburgh.
Sir Charles Ball, Bart., Professor of Surgery in the University of Dublin.
Professor Robert Saundby, Professor of Medicine in the University of Birmingham.
Professor William Russell, Professor of Clinical Medicine in the University of Edinburgh.
Sir W. Whitla, Professor of Materia Medica and Therapeutics, Queen's University, Belfast.
Professor John Yule Mackay, Principal of, and Professor of Anatomy in, University College, Dundee.
Professor G. Elliot Smith, Professor of Anatomy in the Victoria University of Manchester.
*Dr. F. M. Sandwith, Gresham Professor of Physic.
Dr. J. C. McVail, Crown Nominee on the General Medical Council.
Professor Arthur Thomson, Professor of Anatomy in the University of Oxford.
*Dr. Herbert Spencer, Obstetric Physician to University College Hospital, London.
*Sir Frederic Eve, Senior Surgeon to the London Hospital.
Dr. Richard Caton, Consulting Physician to the Liverpool Royal Infirmary.
Dr. Norman Walker, Treasurer of the Royal College of Physicians of Edinburgh.
Mr. H. A. Latimer, } Direct Representatives for
*Mr. T. Jenner Verrall, } England on the General
Dr. J. A. Macdonald, } Medical Council.
*Dr. Alfred Cox, Medical Secretary of the British Medical Association.
*Dr. Dawson Williams, Editor of the "British Medical Journal."
*Dr. H. A. Des Vœux (Honorary Treasurer).
*Dr. S. Squire Sprigge (Honorary Secretary), Editor of "The Lancet."

Those marked with an asterisk were members of the provisional committee, and were chosen by the meeting to form the executive committee.

The appended letter was approved for distribution to the press as an open appeal, and sufficiently explains both what has been done and what it is hoped to do. Hearty coöperation was promised both from Scotland and Ireland, and the committee has been strongly reinforced from both these divisions of the United Kingdom, and also by prominent members of the pharmaceutical profession.

IRISH SUPPORT.

A Belgian medical relief fund was started in Dublin some days ago. A letter from Professor Jacobs, of Brussels, having been received by the Presidents of the Irish Royal Colleges, asking for assistance for distressed Belgian medical men and pharmacists, the Presidents, after consultation with their respective Colleges, summoned a meeting of the medical profession of Dublin. The meeting was held on Nov. 20th in the Royal College of Physicians of Ireland, the President in the chair. The first resolution, moved by Mr. F. Conway Dwyer, President of the Royal College of Surgeons in Ireland, and seconded by Dr. James Little, senior Fellow of the Royal College of Physicians of Ireland, expressed sympathy with the Belgian medical profession, and authorised the opening of a fund for their relief. A further resolution, establishing a committee for the purpose of carrying the first resolution into effect, was proposed by Dr. Joseph O'Carroll, Vice-President of the Royal College of Physicians, and seconded by Mr. William Taylor, Vice-President of the Royal College of Surgeons. Promises and subscriptions amounting to nearly £300 were received after the meeting.

THE OPEN APPEAL.

SIR,—A provisional committee was formed recently to assist in any way that was found possible Belgian doctors and pharmacists, both those remaining in Belgium and those who are refugees in this country, who are involved in utter distress. A statement received from Professor Jacobs, of Brussels University, acting as the spokesman of a Belgian committee with similar aims, has already been published,[1] and certain measures were taken immediately by the provisional committee, who, in announcing what had been done, recognised that the scope for further effort was enormous, and that the provisional committee ought to be reinforced forthwith by representatives of medicine and pharmacy in England, Ireland, Scotland, and Wales.

As a result a strong committee has been formally constituted. It includes representatives of the medical faculties of the Universities, of the great medical and pharmaceutical Corporations, of the General Medical Council, and of the British Medical Association, and the activities of that committee will be limited only by the amount of money and material placed at its disposal, and by the exigencies of the political situation.

The committee is aware that great efforts are being made in numerous directions for the assistance of the Belgian refugees and Belgian people generally, but feels that it will be the pleasure and is, indeed, the duty of medical men and pharmacists to help the medical and pharmaceutical professions of Belgium. The movement is one undertaken by doctors and pharmacists on behalf of the Belgian doctors and pharmacists.

The committee has placed before itself a double programme: (1) to distribute what help it can at the present moment; and (2) to collect funds for the assistance of Belgian medical men and pharmacists in the future.

(1) As a tentative measure 50 packets of drugs and dressings are under order for despatch to Belgium. This will test the precautions which are being taken to ensure that the goods despatched will reach their destination and that they will be used by those only for whom they are intended—that is, the Belgian physicians and surgeons. In the second direction it is hoped to coöperate usefully with the general measures being adopted to succour Belgian doctors and pharmacists in this country.

(2) It is clear that no definite steps can be taken as yet for the rehabilitation of the medical and pharmaceutical professions in Belgium. A considerable sum of money will be required to replace ruined laboratories and pharmacies and to reestablish the ordinary course of medical administration, but nothing can be done now. It is intended, however, to communicate with the United States of America and other neutral countries, as well as with the Allied Nations, so that an international movement may be set up to reinstate the two professions.

But the committee feels that the uncertainty which exists with regard to the fulfilment of the second part of the programme should not prevent immediate and strenuous action in the spheres open to its work. The result of an experimental consignment to Belgium of medical stores will be known shortly, and if, as there is every reason to anticipate, the result is good, such consignments will be made regularly in accordance with the amount of money forthcoming. The committee has evidence that at least 2000 such packets as have already been arranged for are sorely needed, while each packet costs £5, the price being only kept down to this figure by the willingness of Messrs. Burroughs Wellcome and Co. to forego all profit.

At the same time the committee is aware of grave distress among the refugee medical men and pharmacists, and it feels that the organisations for succouring the great mass of Belgian refugees ought to be especially supported in anything that can be done for the members of the two professions.

It appeals therefore for immediate assistance, and appends a list of the first subscriptions actually received. Numerous promises of help have been made, and the committee is much indebted to the facilities which have been afforded to it by the British Medical Association, at whose house (429, Strand) the meetings have been and will in future be held.—We are, Sir, yours faithfully,

RICKMAN J. GODLEE (*Chairman*).

H. A. DES VŒUX (*Honorary Treasurer*),
14, Buckingham Gate, London, S.W.

S. SQUIRE SPRIGGE (*Honorary Secretary*),
"The Lancet" Office, 423, Strand, W.C.

	£	*s.*	*d.*
Sir Lauder Brunton	50	0	0
Mr. J. P. Ellerington (*La Pharmacie Française*)	20	0	0
Dr. William Shears	2	2	0
Miss Lace	1	1	0
Mr. J. Hedley Marsh	10	10	0
Mr. J. W. Bell ...	1	1	0
Mr. R. R. James ...	1	1	0
Mr. M. S. Harford	2	2	0
Dr. N. R. Rawson	1	1	0
Dr. A. E. Porter ...	5	5	0
Mr. J. S. McDonagh	2	2	0
Mr. and Mrs. T. Jenner Verrall...	5	0	0
Dr. F. Dittmar ...	1	1	0
Mr. Francis A. Brooks	5	5	0
Dr. C. Lillingston	1	0	0
R. H....	2	2	0
Dr. H. A. Latimer	1	1	0
Mr. James Hamerton	2	2	0
Dr. F. W. S. Stone	0	10	6
Dr. P. S. Abraham	5	5	0
Sir James Affleck	5	0	0
Mr. Harry Martin	5	5	0
Mr. F. Atthill ...	2	2	0
Dr. J. Quinton Bown	6	6	0
Mr. H. Hilton Heffernan	1	1	0
Dr. L. A. Baine ...	5	5	0
Dr. C. A. Wigan ...	1	1	0
Sir Thos. Smith Clouston	5	0	0
Mr. Geo. Oliver ...	3	3	0
Miss Morehead ...	0	10	0
Dr. Gaitskell	1	1	0
Mr. A. E. Fiddian...	5	5	0
Mr. H. E. Seebohm	5	0	0
Dr. W. Jenkins Oliver	10	10	0
Mr. J. Henry Stormont	5	5	0
Mr. G. S. Grierson	2	2	0
Dr. A. Charpentier	2	2	0
Dr. W. J. Dewar ...	3	3	0
Mr. G. J. Auburn...	5	0	0
Miss Gartside ...	5	0	0
Dr. H. R. Spencer	25	0	0
Dr. J. Kidd	5	0	0
Dr. J. S. Clarke ...	5	0	0
Dr. K. R. Hay ...	2	2	0
Messrs. Burroughs Wellcome and Co.	105	0	0
Colonel H. W. Joynt, A.M.S. ...	1	1	0
Dr. George Bruce	1	1	0
Mr. Herbert Page	3	3	0
Dr. T. H. Livingstone	5	0	0
Professor R. Morison	25	0	0
Mr. E. Kershaw ...	5	0	0
Dr. Jacob...	2	2	0
Dr. J. Thomarson...	1	1	0
Dr. G. Southwell Sander	5	0	0
Dr. C. R. A. Sutton	1	1	0
Dr. H. P. Ferraby	10	0	0
Miss M. F. H. Ivens	5	5	0
Sir Seymour Sharkey	5	5	0
Dr. H. Mallins ...	2	2	0
Dr. James Lees ...	0	5	0
Mr. H. W. Cunningham	2	2	0
Dr. James Hudson	5	5	0
Captain Hubert Armstrong, R.A.M.C.	3	3	0
Dr. William Pyle (promises further help)	3	3	0
Dr. A. A. Turner ...	10	10	0
Dr. Percy Kidd ...	5	0	0
Mr. C. J. Lewis	1	1	0
Mr. H. D. Adcock	1	1	0
"The Lancet" ...	25	0	0

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[1] THE LANCET, Nov. 21st, 1914, p. 1220.

"GAS GANGRENE."

THE following report, which we have received for publication from the Secretary of the War Office, has been jointly drawn up by Sir Anthony A. Bowlby, C.M.G., Colonel, A.M.S., Consulting Surgeon to the Forces Overseas, and Dr. J. Sydney Rowlands. The report is written from the Field Laboratory General Headquarters and dated Nov. 11th, 1914. It is mainly the result of work done at the clearing hospitals at the front, to which patients are taken within a few hours of being wounded. A copy of the report has been sent to the Director of Medical Services, but many of the conclusions and practical recommendations have already been conveyed to the hospitals verbally or by official communications, and attempts are being made at the Lister Institute in London to provide a suitable antitoxin.

Report on Gas Gangrene.

It seems advisable to briefly record the conclusions at which we have so far arrived on the spreading gangrene which has occurred amongst the wounded of all the armies now in France.

One of us (S.R.) has examined the condition bacteriologically, and this examination was carried out in the "Mobile Field Laboratory." In a typical case affecting the hand a bacillus was found which was isolated for examination. A culture of this, when inoculated into a guinea-pig, caused its death in 18 hours. Post mortem there was found a gangrenous cellulitis from which the inoculated organism was recovered. A second guinea-pig inoculated from this culture was sent to the Lister Institute. It arrived safely and died within a few hours of its arrival, thus affording abundance of fresh material for a more detailed examination than was possible under field conditions. An examination of the culture was meanwhile made in the field laboratory and the conclusion arrived at was that it was probably the specific organism of malignant œdema. Further examination made at the Lister Institute by Dr. C. J. Martin, F.R.S., and Dr. Arkwright inclined these observers to the view that the organism in question was identical with one that for some time was confused with that of malignant œdema, known as the bacillus of Ghon and Sach. This organism was originally obtained from a case of gangrene in the human subject. There are some ten different organisms that have been isolated from cases of gas gangrene in man, all of which are closely allied and have the common characteristic of being anaerobic spore-bearers. From other cases in the clearing hospitals at the front several more organisms of this group have been isolated and have been sent to the Lister Institute for confirmatory diagnosis.

A sample of earth from a trench was also examined. The inoculation of a few drops of water, in which this earth had been shaken up, into a guinea-pig killed the animal in 18 hours. Post mortem a similar gangrenous cellulitis was found. The animal was also found, like the guinea-pig inoculated from the gangrenous hand culture, to be infected throughout with a spore-bearing anaerobic organism belonging to the same group. It is reasonable to conclude, therefore, that the gangrene found amongst our wounded soldiers is directly due to infection introduced at the time of the wound, and this is especially likely to occur if muddy clothing has been carried in by the projectile or if earth has been carried in by the explosion. We are, therefore, of the opinion that the gangrene that occurs amongst the wounded is a "traumatic infection" and dates from the moment of the injury. It is solely due to infection from the soil, and is in no way related to sloughing phagedena, or so-called "hospital gangrene."

Clinical picture of gas gangrene.—In the cases we have seen the gangrene has always occurred in connexion with wounds of the extremities. We have not seen it in the head, neck, thorax, or abdomen.

Nature of projectile.—We have seen it in wounds from rifle, shrapnel, and fragments of shell.

Nature of wound.—We have seen it in both slight and very serious wounds, but a larger proportion of the serious wounds are affected by it, especially when large bones have been shattered and muscles extensively torn and extruded. We have seen it with and without fractures, and in a relatively large number of fractures of the femur.

Period of onset.—It is most noticeable that it always shows itself within the first few days or even hours following the infliction of the injury. In two cases we have seen it well marked within 36 hours, and in several others already extensive on the third and fourth day. Several patients have died of it on the third day following that of the injury, and in other patients it has progressed so far that amputation has been performed on the third day.

Onset.—This is characterised by swelling of the injured part, and the gangrene seems especially liable to occur in connexion with that swelling of a limb which is due to extravasation of blood in the subcutaneous tissues and intermuscular planes. It seems to us that interference with the circulation either by extravasation of blood or by tight bandages has a marked influence. In the early stages the patient complains of severe pain which is perhaps due to tension, the result of the swelling, but in the later stages the affected area becomes completely numbed and insensitive. The edges of the wound are generally ragged and sloughy, and a considerable quantity of blood-stained serum constantly exudes and soaks the dressings. This discharge emits a characteristic and most offensive odour which is so marked as to be almost diagnostic. The skin, if not previously discoloured by extravasated blood, assumes a dark purplish or slate-coloured hue.

In the vicinity of the wound it changes subsequently to a more green colour. The swelling extends coincidently with the change of colour, and a few hours later the skin becomes nearly black, and finally forms a black, leathery slough. Beyond the area of discolouration the limb is swollen with gas and fluid exudation, and an emphysematous crackling can be elicited on pressure with the hand. This may spread to a distance of as much as a foot above and below the actually gangrenous area, and so rapid is the extension of the gangrene that we have seen the whole of the lower extremity completely mortified before the end of the third day after the infliction of the wound.

Condition of patient.—Temperature is not materially affected in many cases, and high fever is rare. A temperature of 99–100° is usual. Respiration is not materially quickened; headache is not complained of. The mind is perfectly clear till near the end. The pulse is not greatly quickened, but rapidly loses power, so that several of the patients we have seen have had no perceptible radial pulse. The heart's action is greatly weakened so that its beat is quite difficult to feel.

Vomiting is common and in many cases is frequent. Diarrhœa is rare. Sweating is not generally present, and before death the skin is cold. The tongue is usually covered with a dirty fur, but the mouth is not exceptionally dry. Death appears to be due to cardiac failure, and we have been struck by the extraordinary clearness of the mind of a patient, almost pulseless, and within an hour or two of his death. In the worst cases the gangrene may spread with such rapidity that the whole limb may be cold, of a purple or black colour, immensely swollen, and quite devoid of all sense of touch and power of motion within 36 hours of the onset of the gangrene. The smell of such a limb is overpowering and almost precludes a careful post-mortem examination. If incisions are made before or after death gas and sanious fluid bubble up.

Pus is confined to the edges of the wound, and is very little in proportion to the sanious discharge.

Conclusions.—The practical conclusions we would draw from these observations are as follows:—

1. All tight bandages, and especially those applied at the first field dressing, should be avoided. Shell wounds are so often followed by so much interstitial hæmorrhage that the part swells and the bandage rapidly becomes tighter and interferes with the circulation. Consequently many bandages require to be cut within a few hours of their application.

2. In many cases the tension requires to be relieved by incisions and drainage, and the opportunity should be taken to wash the wounds thoroughly with an antiseptic. Peroxide of hydrogen is one of the best. Great care should be taken to remove portions of clothing, as these contain the infective agent. Shattered fragments of bone and pieces of shell or gravel should be taken out.

3. Amputation may often be successfully performed through tissues made emphysematous by gas but not yet gangrenous.

4. The group of anaerobes causing gangrene are spore-bearers, and spores (especially of this group of anaerobes) are especially difficult to kill by any antiseptic solution or even by boiling. Consequently, in order to sterilise instruments and other things that have been infected other measures are required.

(*a*) Destruction of blankets and clothing soaked by the discharge.

(*b*) Heating in an autoclave at a temperature of 120° Centigrade.

(*c*) Boiling for an hour in a solution of 1/20 carbolic acid or lysol (1 in 10).

It should be remembered that the mud on the clothes of wounded soldiers is almost certainly infected, and care should be exercised to see that the area in which operations or dressing of wounds are performed should be kept free from possible contamination from such a source.

5. Where possible it is advisable to isolate patients under treatment in hospitals, and this is all the more necessary on account of the bad smell which is inseparable from the condition.

(Signed) ANTHONY A. BOWLBY.
SYDNEY ROWLANDS.

Field Laboratory, G.H.Q., Nov. 11th, 1914.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Deputy Inspector-General of Hospitals: R. F. Bown (retired) to the *Orion*. Fleet-Surgeon: M. H. Knapp to the *Pembroke*, additional, for disposal. Staff-Surgeon: G. D. Bateman to the *Victory*, additional, for the *Caroline*, and on commissioning. Surgeons: C. W. F. Greenhill to the *Columbine*, additional, for Queensferry Sick Quarters; P. B. Wallis to the *Pembroke*, additional, for disposal. Temporary Surgeons: M. H. de J. Harper to the *Pembroke*, additional, for duty in connexion with transport of wounded; J. Pratt to the *Victory*, for R.N. Division at Crystal Palace; and D. K. Adams to the *Vivid*, additional, for disposal.

ROYAL NAVAL RESERVE.

Rolf Creasy has been appointed Surgeon for temporary service in His Majesty's Fleet (dated Nov. 14th).

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon:—E. F. Murray to the *Victory*, additional, for the *Caroline*, to date Nov. 24th, and on commissioning, undated.

The undermentioned have been entered as Surgeon Probationers for temporary service: E. J. Coombe, A. G. McKee, D. H. Ferris, G. S. Barnett, J. Brooks, T. J. Lane, E. A. Leak, R. T. Stoney, M. R. Wallace, E. W. Drury, T. J. Sumner, G. E. Mullins, D. Heard, and W. P. Elford.

ARMY MEDICAL SERVICE.

William Tindall Lister to be temporary Colonel (dated Nov. 10th).

Lieutenant-Colonel Alfred P. Blenkinsop to be Assistant Director-General (dated Oct. 29th).

ROYAL ARMY MEDICAL CORPS.

Supernumerary Lieutenant-Colonel Charles H. Burtchaell is restored to the establishment (dated Oct. 29th).

William Allan Chapple to be temporary Major (dated Nov. 10th).

Supernumerary Captain George A. D. Harvey is restored to the establishment (dated Nov. 15th).

Percy Sargent to be Temporary Captain (dated Nov. 5th).

The undermentioned to be Temporary Lieutenants:—Dated Oct. 24th: John Charles Anderson. Dated Oct. 28th: Louis Cassidy. Dated Nov. 1st: Daniel McKelvey. Dated Nov. 2nd: Harry Vere White and Sydney Jacob. Dated Nov. 4th: William Fulton Neil, Gerald Woffanda Maw, Arthur Rennie Muir, William Brown Clark, Thomas Stanhope Gildea Martin, George Holmes Uvedale Corbett, Alexander Hunter, and Cecil Powell. Dated Nov. 5th: Robert Higham Cooper, Samuel McMurrich McLay, and Stewart Ranken Douglas. Dated Nov. 6th: Sydney Arthur Tucker, Julius Meyer Bernstein, and Millais Culpin. Dated Nov. 7th: John Thomas McCullagh, Alexander Johnston Couper, George Wilson Clark, Henry Maitland Moir, Evan Parry Evans, Courtenay Yorke, Laurence Thompson Dean, Henry Vernon Swindale, and John Stevenson. Dated Nov. 9th: Reginald John Hearn, Herbert Sidney Forsdike, Ernest Sydney Hawthorne, Alexander Keith Forbes, Idwal Jones Williams, Albert Latimer Walker, Henry Reginald Stanley Van Ryck de Groot, George Ford Petrie, and Herbert George Murdoch Henry. Dated Nov. 10th: Frederick Edward Wynne, Godfrey William Mitchell, Thomas Murray Newton, Lawrence Crombie, Sidney John Cullum, Joe Downes Yule, John Horace Dancy, Robert Charles Robertson, Albert Ernest Cotterill, Alfred Herbert James, Charles William Smith, Robert Craig, and John Louis Menzies. Dated Nov. 11th: Herbert Midgley Cockcroft, Andrew Gilmour, James McManus, and Bruce Alexander West. Dated Nov. 12th: Alexander Waugh Young.

The undermentioned Lieutenants relinquish their temporary commissions:—Dated Nov. 6th: James M. Renton and Robert S. Berry.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.

Royal Army Medical Corps.

The undermentioned to be Lieutenants (on probation): Dated Sept. 11th: John Rollo Noel Warburton. Dated Oct. 16th: William Clavering Hartgill. Dated Oct. 26th: Mathew McKnight. Dated Oct. 28th: John Smith Sloper. Dated Nov. 2nd: Hugh Alderson Fawcett. Dated Nov. 3rd: Arthur Lawrence Anthony, John Deighton, Cromwell Gamble, Herbert Leslie Garson, William Kerr Russell, John Hunter Sewart, Charles Grimshaw Waddington, George William Watson, Colin Wilson, and William Arthur Young. Dated Nov. 5th: Henry Scott Anderson Alexander. Dated Nov. 7th: James Robertson Cowper McIntosh, Harry Neville Stafford, and Wilfrid Westwood Phillips.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Richard Granville Waddy, from King Edward's Horse (The King's Oversea Dominions Regiment), to be Lieutenant.

TERRITORIAL FORCE.

Royal Army Medical Corps.

The undermentioned to be Lieutenants:—Rankine Greig Walker, Arthur Joseph Gordon Hunter, James Robertson Menzies (late Lieutenant, Edinburgh University Contingent, Senior Division, Officers Training Corps), William Henry Armistead (late Cadet Corporal, Edinburgh University Contingent, Senior Division, Officers Training Corps), Archibald Mathison Stewart (late Cadet, Edinburgh University Contingent, Senior Division, Officers Training Corps).

4th London Field Ambulance: Captain Thomas B. Layton, from the Unattached List for the Territorial Force, to be Captain (temporary). Alfred Richard Spencer to be Lieutenant.

5th London Field Ambulance: Captain Robert Corfe to be Major.

6th London Field Ambulance: Captain Norman C. Rutherford, from the Unattached List for the Territorial Force, to be Major (temporary).

1st London (City of London) General Hospital: Philip Hamill to be Captain.

2nd London (City of London) General Hospital: To be Captains: Gordon Wilkinson Goodhart and Archibald Douglas Reid.

1st London (City of London) Field Ambulance: Robert Williamson Asher Salmond to be Lieutenant.

3rd London (City of London) Field Ambulance: Thomas John Tyndale McHattie to be Captain. Robert Carswell to be Lieutenant.

1st London General Hospital: Captain Robert J. W. Oswald to be Major.

South Wales Mounted Brigade Field Ambulance: Major Herbert Jones, from the list of officers whose services are available on mobilisation, Sanitary Service, to be Major.

1st East Anglian Field Ambulance: Captain Lee D. B. Cogan, from Attached to other than Medical Units, to be Captain. Lieutenant Robert Ellis, from Attached to other than Medical Units, to be Lieutenant.

2nd East Anglian Field Ambulance: Herbert Vawdrey Capon (late Lieutenant, 2nd East Anglian Brigade, Royal Field Artillery) to be Lieutenant.

3rd East Anglian Field Ambulance: To be Lieutenants: Raymond Herbert Swindells and Mountague Adye Cholmeley (late Lieutenant, Royal Army Medical Corps (Militia)).

3rd Highland Field Ambulance: John George Anderson to be Lieutenant.

1st North Midland Field Ambulance: Hugh Agnew Macmillan to be Lieutenant. Thomas Stokoe Elliot to be Lieutenant.

2nd North Midland Field Ambulance: Bertram Sherrard Wills to be Lieutenant.

1st Northumbrian Field Ambulance: Hubert Shield to be Lieutenant.

1st West Riding Field Ambulance: Lieutenant Basil

Hughes, from Attached to Units other than Medical Units, to be Lieutenant.

London Mounted Brigade Field Ambulance: Lieutenant-Colonel (Honorary Major in the Army) Edmond James Lawless (late 23rd (County of London) Battalion, The London Regiment) to be Lieutenant-Colonel.

3rd Lowland Field Ambulance: Captain Henry Alfred Leebody to be Major (temporary). Clifford Halliday Kerr Smith (late Cadet, Edinburgh University Contingent, Senior Division, Officers Training Corps) to be Lieutenant.

1st Welsh Field Ambulance: William George Helsby to be Lieutenant.

2nd Western General Hospital: The undermentioned to be Lieutenants: Charles Harold Crawshaw, Edward Stanley Brentnall, and Frank Graham Wrigley.

2nd Wessex Field Ambulance: John Penn Milton to be Lieutenant.

2nd London Sanitary Company: Lieutenant William John More Slowan to be Captain (temporary). Ashley George Gyton Thompson to be Lieutenant.

Sanitary Service: Alexander Grant Russell Foulerton to be Captain on the List of Officers available on Mobilisation.

North Midland Clearing Hospital: The undermentioned to be Lieutenants: Montague Dixon, William Thomas Wood, David Dewar McNeill, Vincent Ackroyd Palliser Costobadie, George William Macbeath Andrew, and James Hugh Thomas.

Attached to Units other than Medical Units.—Captain Richard Brodie to be Major. Lieutenant David Dickie to be Captain. To be Lieutenants: Charles Donaldson Law, Charles Martin Mitchell, Archibald Hamilton, William Love, George Loraine Kerr Pringle, Arthur Errington Ridsdale (late Second Lieutenant, Sussex Imperial Yeomanry), Joseph Swinburn Townley (late Second Lieutenant, Brecknockshire Battalion, The South Wales Borderers), George Dingwall Thomson, Lieutenant Eliezer Coplans, from the 1st London (City of London) Field Ambulance, Arthur Jonas Friedlander, Gordon Whitehead, John Stephenson Clarke, Patrick Black, and Harry Greenwood Butterfield.

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Lieutenant-Colonel James C. Renton, from 4th Scottish General Hospital, to be Lieutenant-Colonel.

EXAMINATION FOR ENTRY AS ACTING-SURGEONS, R.N.

Owing to the outbreak of war the course for Acting-Surgeons has been curtailed, the greater part of the Haslar course being eliminated, though the Greenwich course was completed. As a consequence the places of these gentlemen on the list of surgeons, R.N., has had to be assigned on the results of the Entrance Examination with the addition of the marks gained at the examination at the end of the Greenwich course. The marks obtained and the order of seniority are as follows:—

H. B. Parker	2488	W. F. Beattie	2113
J. L. Priston	2427	H. W. Fitzroy-Williams ...	2074
R. F. Quinton	2365	F. E. Fitzmaurice	2005
M. J. Aitken	2336	T. J. O'Riordan	1981
J. A. Maxwell	2267	J. C. Kelly	1970
M. S. Moore	2193	J. M. Horan	1886
W. G. Thwaytes*	—	G. M. Graham	1811
C. E. Greeson	2132	F. C. Hunot	1805

The Admiralty prizes were awarded as follows:—Gold medal, Surgeon H. B. Parker, formerly of the London Hospital; silver medal, Surgeon J. L. Priston, formerly of the London Hospital; Greenwich group prize (pocket instrument case), Surgeon J. L. Priston.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8097 births and 4966 deaths were registered during the week ended Saturday, Nov. 21st. The annual rate of mortality in these towns, which had declined from 13·8 to 13·0 per 1000 in the four preceding weeks, rose in the week under notice to 14·3 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 13·6, against 14·0 per 1000 in the metropolis. Among the several towns the death-rate last week ranged from 5·8 in Leyton and in Oxford, 5·9 in Hornsey, 6·7 in Bath, and 6·9 in Swindon, to 21·0 in Middlesbrough, 21·2 in Grimsby, 22·3 in Birkenhead, 22·4 in Rotherham, and 23·1 in Newcastle-on-Tyne.

The 4966 deaths from all causes were 449 in excess of the number in the previous week, and included 440 which were referred to the principal epidemic diseases, against 497 and 454 in the two preceding weeks. Of these 440 deaths, 148 resulted from measles, 138 from infantile diarrhœal diseases, 74 from diphtheria, 35 from whooping-cough, 28 from scarlet fever, and 17 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3 per 1000, and coincided with that recorded in the previous week. The deaths attributed to measles, which had increased from 67 to 167 in the five preceding weeks, fell to 148 last week, and caused the highest annual death-rates of 1·6 in Salford, 1·8 in Plymouth, 1·9 in Birkenhead, 2·4 in Rotherham, 2·6 in Gateshead, 2·8 in Wigan, 3·0 in Wakefield, and 3·4 in Newcastle-on-Tyne. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had steadily declined from 1223 to 131 in the nine preceding weeks, rose to 138 last week, and included 34 in London, 9 in Liverpool, 8 in Birmingham, 7 in Nottingham, and 6 each in Manchester, Sheffield, and Newcastle-on-Tyne. The fatal cases of diphtheria, which had been 61, 93, and 58 in the three preceding weeks, rose to 74 last week, of which 20 occurred in London, 4 each in Birmingham and Manchester, and 3 each in West Ham, Portsmouth, and Bristol. The deaths attributed to whooping-cough, which had been 32, 38, and 39 in the three preceding weeks, fell to 35 last week, and included 12 in London, 3 each in Liverpool and Newcastle-on-Tyne, and 2 in Bristol. The deaths referred to scarlet fever, which had been 38, 34, and 42 in the three preceding weeks, fell to 28 last week, of which 10 belonged to London, 5 to Manchester, and 2 each to Salford and Oldham. The fatal cases of enteric fever, which had been 14, 17, and 17 in the three preceding weeks, were again 17 last week, and included 3 in London and 2 each in Enfield, Southend-on Sea, and Hull.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 3071 to 4976 in the 13 preceding weeks, had further risen to 5005 on Saturday last; 627 new cases were admitted during the week, against 598, 690, and 751 in the three preceding weeks. These hospitals also contained on Saturday last 1631 cases of diphtheria, 66 of enteric fever, 59 of whooping-cough, and 54 of measles, but not one of small-pox. The 1264 deaths from all causes in London were 109 in excess of the number in the previous week, and corresponded to an annual death-rate of 14·6 per 1000. The deaths referred to diseases of the respiratory system, which had been 197, 193, and 181 in the three preceding weeks, rose to 203 in the week under notice, but were 3 below the number in the corresponding week of last year.

Of the 4966 deaths from all causes in the 97 towns, 187 resulted from different forms of violence and 393 were the subject of coroners' inquests, while 1446 occurred in public institutions. The causes of 57, or 1·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Leeds, Bristol, Salford, and in 48 other smaller towns. Of the 57 uncertified causes of death, 11 were registered in Birmingham, 9 in Liverpool, 3 in Hull, and 2 each in Southend-on-Sea, Bootle, Bradford, Sheffield, Darlington, and Sunderland.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1099 births and 730 deaths were registered during the week ended Saturday, Nov. 21st. The annual rate of mortality in these towns, which had been 14·6, 15·8, and 15·2 per 1000 in the three preceding weeks, rose to 16·6 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 15·4, against 13·6 per 1000 in the 97 large English towns. Among the several towns the death-rate last week ranged from 7·0 in Clydebank, 7·6 in Kirkcaldy, and 8·8 in Kilmarnock, to 18·8 in Falkirk, 22·5 in Dundee, and 23·5 in Leith.

The 730 deaths from all causes were 62 in excess of the number in the previous week, and included 69 which were referred to the principal epidemic diseases, against 79 and 50 in the two preceding weeks. Of these 69 deaths, 19 resulted from infantile diarrhœal diseases, 17 from diphtheria, 16 from scarlet fever, 13 from whooping-cough, and 2 each from enteric fever and measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·6, against 1·3 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had declined from 31 to 20 in the four preceding weeks, were 19 last week, of which 6 belonged to Glasgow, 4 to Dundee, 3 to Edinburgh, and 2 to Aberdeen. The deaths referred to diphtheria, which had been 16, 18, and 7 in the three preceding weeks, rose to 17 last week, and included 9 in Glasgow, 4 in Edinburgh, and 2 in Aberdeen. The fatal cases of scarlet fever, which had been 14, 17, and 8 in the three preceding weeks, rose to 16 last week; 8 deaths were recorded in Glasgow, 3 in Aberdeen, and 2 each in Dundee and Paisley. The deaths attributed to whooping-cough, which had been 14, 12, and 7 in the three preceding weeks, increased to 13 last week, of which 9 belonged to Glasgow. The 2 fatal cases of enteric fever were registered in Glasgow, and those of measles in Glasgow and Dundee.

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* Surgeon Thwaytes, through being seconded to the Royal Infirmary, Edinburgh, did not take the Greenwich course, and therefore has been allowed to take his original place in the London Entrance Examination, viz., seventh.

The deaths referred to diseases of the respiratory system, which had steadily increased from 62 to 111 in the nine preceding weeks, were 112 in the week under notice; 26 deaths resulted from different forms of violence, against 30 and 32 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 580 births and 423 deaths were registered during the week ended Saturday, Nov. 21st. The annual rate of mortality in these towns, which had been 15·2, 18·2, and 17·7 per 1000 in the three preceding weeks, rose to 18·3 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 16·7, against corresponding rates of 13·6 and 15·4 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 18·8 in Dublin (against 14·6 in London and 16·6 in Glasgow), 19·1 in Belfast, 27·9 in Cork, 15·2 in Londonderry, 6·8 in Limerick, and 13·3 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 13·5 per 1000.

The 423 deaths from all causes were 15 in excess of the numbers in the previous week, and included 44 which were referred to the principal epidemic diseases, against numbers declining from 51 to 40 in the three preceding weeks. Of these 44 deaths, 13 resulted from infantile diarrhœal diseases, 12 from scarlet fever, 10 from measles, 4 from diphtheria, 3 from enteric fever, and 2 from whooping-cough, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·9, against 1·3 and 1·6 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 19, 21, and 10 in the three preceding weeks, rose to 13 last week, and included 7 in Dublin and 2 each in Belfast and Waterford. The deaths referred to scarlet fever, which had been 12, 6, and 14 in the three preceding weeks, fell to 12 last week, of which 6 were recorded in Belfast and 4 in Waterford. The fatal cases of measles, which had been 7, 11, and 9 in the three preceding weeks, were 10 last week, and comprised 9 in Belfast and 1 in Cork. The 4 deaths attributed to diphtheria, of which 2 occurred in Cork, were double the average in the earlier weeks of the quarter. Of the 3 deaths referred to enteric fever 2 were registered in Dublin and 1 in Belfast; the 2 fatal cases of whooping-cough occurred in Belfast.

The deaths referred to diseases of the respiratory system, which had been 61, 86, and 67 in the three preceding weeks, rose to 85 in the week under notice. Of the 423 deaths from all causes, 128, or 30 per cent., occurred in public institutions, and 7 resulted from various forms of violence. The causes of 9, or 2·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion was equal to 1·1 per cent.

VITAL STATISTICS OF LONDON DURING OCTOBER, 1914.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 14·0 per 1000 of the population, estimated at 4,516,612 persons in the middle of the year; in the three preceding months the rates were 7·8, 7·5, and 11·6 per 1000 respectively. The lowest rates last month were recorded in Chelsea, Hackney, Holborn, the City of London, and Wandsworth; and the highest rates in St. Pancras, Bethnal Green, Stepney, Deptford, and Woolwich. Scarlet fever was again much more prevalent than it had been in any previous month of this year; the greatest proportional prevalence of this disease was recorded in Hammersmith, St. Pancras, Stepney, Southwark, and Deptford. The Metropolitan Asylums Hospitals contained 4561 scarlet fever patients at the end of last month, against 3113, 3199, and 4157 at the end of the three preceding months; the weekly admissions averaged 618, against 410, 414, and 598 in the three preceding months. Diphtheria was also very much more prevalent than in any earlier month of the year; this disease was proportionally most prevalent last month in Hampstead, St. Marylebone, St. Pancras, Stepney, Deptford, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1042, 1030, and 1296 at the end of the three preceding months, had further risen to 1489 at the end of last month; the weekly admissions averaged 213, against 131, 128, and 188 in the three preceding months. Enteric fever was slightly less prevalent than in the previous month; the greatest proportional prevalence of this disease last month was recorded in Chelsea, the City of Westminster, Holborn, Shoreditch, and Greenwich. There were 65 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 36, 39, and 57 at the end of the three preceding months; the weekly admissions averaged 11, against 6, 7, and 11 in the three preceding months. Erysipelas was proportionally most prevalent in Shoreditch, Bethnal Green, Stepney, Southwark, Deptford, and Greenwich. The 34 cases of puerperal fever notified during the month included 7 in Camberwell and 4 each in Stepney and in Southwark. The 3 cases of cerebro-spinal meningitis belonged respectively to Chelsea, Shoreditch, and Stepney; and of the 7 cases of poliomyelitis 2 belonged to Stepney and 1 each to Islington, Finsbury, Shoreditch, Lambeth, and Camberwell.

The mortality statistics relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations of the several boroughs. During the four weeks ending Oct. 31st the deaths of 4894 London residents were registered, equal to an annual rate of 14·1 per 1000; in the three preceding months the rates had been 11·3, 12·6, and 15·5 per 1000 respectively. The death-rates last month ranged from 9·3 in Stoke Newington, 10·0 in Hampstead, 10·4 in Wandsworth, 10·5 in Lewisham, 11·0 in Chelsea, and 11·9 in the City of London, to 15·6 in Battersea, 16·3 in St. Pancras, 16·9 in Bethnal Green, 19·2 in Finsbury, 19·6 in Shoreditch, and 21·0 in Southwark. The 4894 deaths from all causes included 97 from measles, 23 from scarlet fever, 83 from diphtheria, 38 from whooping-cough, 11 from enteric fever, and 334 from diarrhœa and enteritis among children under 2 years. The lowest death-rates from these infectious diseases were recorded in Kensington, Chelsea, Hampstead, Stoke Newington, Holborn, the City of London, Wandsworth, and Lewisham; and the highest rates in Fulham, Islington, Shoreditch, Bethnal Green, Poplar, and Southwark. The 97 fatal cases of measles were 26 above the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Hammersmith, St. Pancras, Hackney, Shoreditch, Bethnal Green, Poplar, and Southwark. The deaths from scarlet fever were 7 above the average; of the 23 fatal cases recorded last month 6 belonged to Stepney, 3 to Fulham, and 2 each to Islington, Bethnal Green, Poplar, and Wandsworth. The 83 deaths from diphtheria were 42 in excess of the corrected average number; this disease was proportionally most fatal in Fulham, Hampstead, Islington, Shoreditch, Camberwell, and Woolwich. The 38 fatal cases of whooping-cough were 3 above the average; the highest death-rates from this disease were recorded in Paddington, Fulham, Finsbury, Shoreditch, Bethnal Green, and Southwark. The 11 deaths from enteric fever were 11 below the average, and included 2 in Hampstead and 2 in Lambeth. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in Shoreditch, Bethnal Green, Poplar, Southwark, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was 36·2 per cent. above the average.

NATIONAL UNIVERSITY OF IRELAND.—Among those who have been coöpted Members of the Senate of the National University of Ireland are Dr. J. F. O'Carroll, of Dublin, and Mr. C. Y. Pearson, of Cork.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING OCTOBER, 1914.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON...	**4,516,612**	—	**3159**	**998**	—	**83**	**1**	**34**	**566**	**3**	**7**	**4851**	**14·0**	—	**97**	**23**	**83**	**38**	**11**	**334**	**586**	**1·7**	**4894**	**14·1**
West Districts.																								
Paddington	142,055	—	100	28	—	1	—	—	12	—	—	141	12·8	—	—	1	2	2	—	10	15	1·4	150	13·6
Kensington	170,817	—	126	20	—	1	1	—	16	—	—	164	12·5	—	1	1	—	1	—	8	11	0·8	183	13·9
Hammersmith	124,750	—	121	13	—	3	—	2	5	—	—	144	15·0	—	5	—	2	1	1	2	11	1·1	120	12·4
Fulham	158,849	—	111	32	—	2	—	1	14	—	—	160	13·1	—	4	3	4	4	—	17	32	2·6	165	14·0
Chelsea	63,791	—	15	3	—	3	—	1	4	1	—	27	5·5	—	—	—	—	—	1	1	2	0·4	57	11·0
City of Westminster	152,346	—	91	16	—	6	—	—	13	—	—	126	10·8	—	1	—	2	1	1	7	12	1·0	134	12·1
North Districts.																								
St. Marylebone	112,892	—	79	31	—	2	—	—	3	—	—	115	13·3	—	—	1	2	1	—	7	11	1·3	119	14 0
Hampstead	86,731	—	23	55	—	1	—	—	5	—	—	84	12·6	—	—	—	3	—	2	—	5	0·8	63	10·0
St. Pancras	212,497	—	196	63	—	3	—	1	27	—	—	290	17·8	—	8	—	4	2	—	15	29	1·8	265	16·3
Islington	324,764	—	271	66	—	7	—	2	46	—	1	393	15·8	—	8	2	11	2	—	30	53	2·1	372	14·5
Stoke Newington	50,454	—	40	6	—	1	—	2	8	—	—	57	14·7	—	—	—	—	—	—	1	1	0·3	38	9·3
Hackney	223,724	—	95	43	—	3	—	1	34	—	—	176	10·3	—	13	—	3	2	1	13	32	1·9	219	12·9
Central Districts.																								
Holborn	45,861	—	12	7	—	2	—	—	3	—	—	24	6·8	—	—	—	1	—	1	—	2	0 6	52	14·8
Finsbury	83,212	—	50	13	—	1	—	—	8	—	1	73	11·4	—	—	—	1	2	—	8	11	1·7	124	19·2
City of London	17,129	—	5	4	—	—	—	—	1	—	—	10	7·6	—	1	—	—	—	—	—	1	0 8	15	11·9
East Districts.																								
Shoreditch	108,869	—	60	20	—	4	—	2	23	1	1	111	13·3	—	9	1	3	2	—	18	33	4·0	159	19 6
Bethnal Green	127,662	—	108	32	—	1	—	—	49	—	—	190	19·4	—	7	2	1	4	—	30	44	4·5	160	16·9
Stepney	273,265	—	351	122	—	1	—	4	54	1	2	535	25·5	—	2	6	4	2	—	24	38	1·8	306	15·2
Poplar	160,222	—	93	42	—	5	—	2	17	—	—	159	12·9	—	6	2	3	1	1	24	37	3·0	187	15 0
South Districts.																								
Southwark	186,941	—	166	30	—	5	—	4	35	—	—	240	16·7	—	13	—	2	5	—	31	51	3·6	300	21·0
Bermondsey	124,213	—	58	23	—	1	—	—	18	—	—	100	10·5	—	4	—	2	—	1	14	21	2·2	144	15·1
Lambeth	296,724	—	185	50	—	3	—	1	28	—	1	268	11·8	—	8	—	6	—	2	20	36	1·6	361	15·6
Battersea	167,338	—	128	28	—	—	—	—	24	—	—	180	14·0	—	4	—	2	2	—	17	25	1·9	177	13·9
Wandsworth	338,998	—	144	60	—	5	—	2	28	—	—	239	9·2	—	—	2	7	1	—	10	20	0·8	271	10·4
Camberwell	262,020	—	159	43	—	6	—	7	25	—	1	241	12·0	—	3	1	7	1	—	10	22	1·1	285	14·0
Deptford	109,182	—	115	30	—	1	—	—	18	—	—	164	19·6	—	—	—	1	1	—	8	10	1·2	120	14·1
Greenwich	96,037	—	64	22	—	5	—	—	20	—	—	111	15·1	—	—	—	1	—	—	6	7	1·0	95	12·7
Lewisham...	172,433	—	92	32	—	4	—	—	13	—	—	141	10·7	—	—	—	3	—	—	2	5	0·4	141	10·5
Woolwich	122,836	—	100	64	—	—	—	2	13	—	—	179	19·0	—	—	1	6	1	—	1	9	1·0	112	12·2
Port of London	—	—	1	—	—	6	—	—	2	—	—	9	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

Obituary.

ISAAC BURNEY YEO, M.D. LOND., F.R.C.P. LOND.,

CONSULTING PHYSICIAN TO KING'S COLLEGE HOSPITAL AND TO THE WESTMINSTER GENERAL DISPENSARY.

THE sudden death of Dr. Isaac Burney Yeo, of Cadogan-place, S.W., which occurred on Nov. 20th, removes a personality for many years familiar in the West-end of London and at many foreign health resorts.

Until comparatively recently Dr. Burney Yeo maintained such an appearance of youthful vigour that it will perhaps be a surprise to many to learn that he commenced his medical studies at King's College, London, so far back as 1858, and that even then his age was somewhat in advance of that of most of the men of his year. He gave early promise of subsequent distinction, being awarded one of the junior scholarships at the end of his first year, and later gaining the senior scholarship. In view of the trend of much of his work in after life it is interesting to note that in the first year of his studies he obtained a prize in materia medica. In 1865 he was appointed resident medical tutor at King's College, a post he held until 1871. Meanwhile he had been elected assistant physician at King's College Hospital, and was also similarly engaged at the Brompton Hospital for Consumption and Diseases of the Chest, a connexion which was continued for ten years. In 1871 he resigned the medical tutorship and took up his residence in Hertford-street, Mayfair, where he remained for the greater part of his life. Gifted with a fluent pen and a graceful style, he wrote many articles in the *Fortnightly*, the *Contemporary*, and the *Nineteenth Century* on subjects connected with the treatment of various forms of disease at foreign health resorts, and doubtless these contributed largely to his success in his particular line. In preparing for these articles he took long autumn holidays in Switzerland, and in the days when it was permissible to practise there without having a foreign qualification he used to astound medical climbers by always appearing dressed as though about to visit patients in town. Those who knew him well realised that it was impossible to expect to see him in loose, untidy garb; when in London he always affected the same trim appearance, and maintained a calm, deliberate professional manner. In 1885 he was made professor of clinical therapeutics at King's College, but the course of lectures was not obligatory and was poorly attended, though it led to the publication in 1893 of a very successful "Manual of Medical Treatment." In this work he approached the teaching of therapeutics from the side of the disease, and not from the side of the drug or remedy, following the example of Dujardin-Beaumetz in his "Leçons de Clinique Thérapeutique" and of Hare's "System of Practical Therapeutics," and freely acknowledging his indebtedness to these authors. From its lucidity this book met with ready acceptance and speedily passed through several editions. The other two books from his pen, "Food in Health and Disease" and "Climate and Health Resorts," although they possessed the same charm of diction, were addressed more to the public than to the student of medicine, and did not attract much attention. For a short time before the end of his career at King's College Hospital he was associated with the late Dr. A. B. Duffin as joint professor of medicine, and on his retirement he was elected consulting physician and emeritus professor of medicine.

As a teacher in the wards he was perhaps unduly emphatic and impressive; students, who are keen critics, were sometimes suspicious of a steady level of emphasis. His teaching was sound, however, and it was based on considerable experience of all chest diseases, while his ready store of knowledge of matters connected with climatic and therapeutic details was invaluable to those who were sufficiently advanced to appreciate the wealth of material presented to them. Still it must be confessed that many who heard of the advantages of the climatic treatment of consumption over the bedside of an ordinary patient in hospital were inclined to be sceptical, so long as these improvements could not be demonstrated in the case which furnished the text for the discourse. Of his sincerity there could be no question, but students, unless of the post-graduate type, desire a supply of material which can be of service in the examination room or of which they can expect to make use in the near future, among the poor patients likely to be their portion in the early years after qualification. While his teaching was, therefore, in advance of the needs of the average student, his house physicians and many young practitioners learnt to respect his obvious sincerity and to be grateful for innumerable hints which resulted from observation or from a watchful interest in current literature.

It is somewhat difficult to estimate his position as a colleague. Comparatively early in his career he was disappointed by the non-realisation of cherished schemes, and this led to a degree of angularity towards certain senior colleagues to whom, rightly or wrongly, he attributed the slight. This led to a certain aloofness which pervaded his relationship with many of his colleagues, and, while he was capable of forming many firm friendships, his attitude towards colleagues was frequently marked by an air of neutrality, and sometimes of hostility. To those who were admitted to intimacy he was at all times charming; as a raconteur, especially of gossip connected with professional matters, he was probably unrivalled, and as a member of the Garrick Club it was natural that many of his anecdotes should be connected with literary, artistic, and theatrical subjects, which never fail to find eager auditors. This facility always led to a ready welcome in society, and for many years his figure was familiar also at the meetings of the British Medical Association. On several occasions he contributed papers at these annual gatherings, but his sensitive character and his impatience of opposition led to some degree of friction on more than one occasion.

As a scientific physician he was distinctly successful in acquiring a high class of consulting work; his emphatic manner was impressive on medical points, while it was once remarked of him that on entering a drawing-room he instinctively knew the right amount of deference to be observed to each individual lady of title who might be present. The secret of his success, however, was more probably to be found in the diagnostic skill he brought to each patient and in his method of coping with the difficulties presented by each individual case. Reference has already been made to his range of professional study and his ready assimilation of new ideas. Among other examples may be instanced his development of the theory of intestinal antisepsis, his construction of the inhaler for consumptives which bears his name, and the evolution of a special form of treatment for typhoid fever. The number of new remedies he employed in hospital work can be gathered from a perusal of the early editions of his "Manual of Medical Treatment," but while he felt impelled to test the validity of every claim, his conclusions may frequently be summed up as "Non proven." Enthusiastic, yet cautious, bold and plain speaking, yet sensitive and reserved, filled with the self-respect which he considered was his due as a representative of an honourable branch of the medical profession, his sudden death creates a blank in the fast thinning ranks of general physicians.

Rather late in life he married Winifred Helen, daughter of the late Dr. T. Spyers, who survives him. He leaves no children.

EUSTACE SMITH, M.D. LOND., F.R.C.P. LOND.,

SENIOR PHYSICIAN TO THE EAST LONDON HOSPITAL FOR CHILDREN; CONSULTING PHYSICIAN TO THE CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST.

Dr. Eustace Smith, whose death occurred after a short illness on Saturday, Nov. 14th, in his eightieth year, was the third son of the Rev. J. H. Smith, vicar of Milverton, Warwickshire, and was educated first at Leamington College and afterwards at University College, London. He studied for some time in Paris, qualified M.R.C.S. Eng. in 1858, and subsequently graduated as Doctor of Medicine in the University of London in 1865. In 1870 he joined the staff of the East London Hospital for Children, Shadwell, becoming senior physician to that hospital as long ago as 1874, in which year he was elected a Fellow of the Royal College of Physicians of London. Despite his age he was in active consulting practice till a few weeks ago, and his keen interest in medical work in its relation to the health of the child was never relaxed. At the Seventeenth International Congress of Medicine held last year in London he was President of the Section for Children's Diseases, and he was a late president of the Medical Officers of Schools Association. For some time in his earlier professional career he travelled with the late King of the Belgians, Leopold II., by whom he was appointed physician, and nominated Chevalier of the Order of Leopold.

Dr. Eustace Smith was a frequent contributor to English and American medical journals, and was the author of a book entitled "Wasting Diseases of Infants and Children," which has gone through six editions, and thoroughly deserved its popularity. He wrote also "A Practical Treatise on Disease in Children," "Clinical Studies of Disease in Children," and "Some Common Remedies and their Use in Practice." He also contributed the article on "Diseases of Children" in Quain's "Dictionary of Medicine," and wrote many other articles on allied subjects for Allbutt's "System of Medicine," "The Index of Treatment," and Latham and English's "System of Treatment." He married in 1875 Katharine Isabella Place, by whom he had a son and a daughter.

Dr. Graham Little writes: "Dr. Eustace Smith's name is imperishably associated with the East London Hospital for Children, of which he became senior physician as long ago as 1874. As now the oldest member of the active staff of that hospital I should like to put on record some of the personal impressions left by 19 years of close association with him. Although he had joined the staff long before some of its present members were born, he retained to the very last—and I came home with him from the hospital only 12 days before his death—a vigorous openmindedness which the youngest of us might envy, and which accorded well with his singularly youthful appearance. He was delighted when, as often happened, patients who had consulted him some 20 or 30 years earlier, sought him out, and when confronted with him insisted that he must be his own son. 'When I was a child,' such a patient would say, 'I was taken to see your father,' and 'Sometimes,' said my old friend, 'I do not trouble to disabuse them by telling them that it was myself they saw.' It was our custom since I joined the staff to hold an annual dinner of past and present members, of which I had the organisation. He was, of course, the permanent president of these gatherings, and has not missed one of them in 19 years. Awaiting the arrival of guests at one of these functions, I was standing with Sir Bryan Donkin at the head of the stairs leading to the reception room. We saw a tall and agile figure bounding up from the foot of the long ascent, taking three steps at a time. 'That is certainly Smith,' said Donkin; 'no one else is as young as that,' and he was right. If Heckford originated the East London Hospital for Children, Eustace Smith made and established its present great reputation. He loved it like a father. Joining the staff only two years after its foundation, for 43 years he gave unstintingly of his time and thought and care. His management of committee meetings, both medical and lay, was delightful. I feel sure that there are many other members of the present staff who, like myself, have felt so strong an affection for 'our senior physician' that we have remained members longer than we should otherwise have done were it not for the lure of that commanding personality. He was ever ready to help his younger colleagues, whether it might be to put practice in the way of the struggling junior, to help a man to the coveted F.R.C.P. in the most unobtrusive and delicate manner, or to place at his disposal his marvellous store of experience. His spirit permeated the entire institution, and everyone who has ever been associated with 'Shadwell,' in any capacity whatever, loves it with a very special love. He had a very happy and humorous readiness of repartee. He used to narrate with glee a little incident which happened in his attendance on King Leopold of Belgium, whose physician he was up to the King's death. During one of his visits to England His Majesty complained of insomnia, which Eustace Smith treated perfectly successfully with a nightly dose of 15 grains of bicarbonate of soda. The King returned to his own country, and it was only after some considerable period of time that he again met his English physician. When he did so something like the following conversation ensued: 'Do you know, Dr. Eustace Smith, that I showed the prescription you gave me for sleeplessness to my Court physician, and he tells me that you ordered me *common* bicarbonate of soda?' 'But, if I remember right, your Majesty benefited by my treatment.' 'Oh, yes, it cured my insomnia, but bicarbonate of soda is such a very commonplace drug. My physician was quite surprised at your ordering it for me.' 'Ah, your Majesty, you will forgive me for reminding you that Naaman the Syrian also objected to the Jordan as too commonplace a stream for his use—until immersion in it cured his leprosy.' Surely a knockout reply! Eustace Smith was immensely pleased with the well-deserved compliment paid to him in his selection to preside over the Children's Section at the last International Congress. But there is reason to think that the fatigue, and especially the disturbance of his very regular habits entailed by the abounding hospitality of that festival, first impaired his marvellous vitality. It is a curious coincidence that another most beloved octogenarian of a similar abundant activity, Lord Roberts, died on the same day and very nearly at the same hour. It is not too much to say that to a very large circle of friends and patients something like the same void is made by the death of 'our senior physician' as is felt by the nation at large to result from the loss of the great soldier."

Correspondence.

"Audi alteram partem."

VOLUNTEER SURGEONS FOR FRENCH HOSPITALS.

To the Editor of THE LANCET.

SIR,—As one of the men who answered Dr. James Donelan's appeal for surgeons for the French hospitals, my experiences in France may be of interest.

Accompanied by a colleague, Mr. A. L. Home, who like myself was recommended from the London Committee of the Croix Rouge Française, I went to Paris on Oct. 7th. On application to the head office of the French Red Cross we were told that at the moment there were no vacancies for supernumerary surgeons at the advanced ambulances. A wire, however, had just come in asking urgently for two English surgeons to take charge of a hospital at Villeneuve-sur-Lot, some 75 miles east of Bordeaux. Though we would have preferred to go to the actual front, we felt that we could not refuse; and in any case we were informed that just then very large drafts of wounded men were being sent down to the more remote parts of France in order to keep the metropolitan area free.

Our passports and credentials, including letters from influential persons connected with our provincial hospital at home, were duly examined. These being deemed satisfactory we were furnished with vouchers to obtain railway facilities and with a sort of contract setting forth that in return for our services we should receive board and lodging free. This contract was embodied in a letter of introduction to the lady who had sent the telegram and who it was that had turned her chateau into a hospital.

Travelling *viâ* Bordeaux, on arriving at Villeneuve we found there were five hospitals containing 775 beds. Of these one was directly under the military authorities (200 beds) with a resident medical officer, Dr. Guy, who is an excellent X ray worker, one with 200 beds under the Société de Secours aux Blessés, and three others under l'Union des Femmes de France with 200, 75, and 70 beds respectively. The last four were served by elderly general practitioners resident in the district, and had each an efficient resident staff nurse and a body of Croix Rouge helpers more or less trained. It was to one of the smaller institutions which had been established solely at the expense of Madame Georges Leygues that we were specially recommended, though our services were demanded later at all the other hospitals except l'Hôpital Militaire.

We had a cordial welcome from our French *onfrères*, and started into work at once at Madame Leygues's Hospital. But having been asked by the doctor in charge to see some of the more serious cases at one of the other hospitals, and having arranged to do the necessary operations for these, we were informed by the lady president of l'Union des Femmes de France that in case of any mishap the military authorities would hold her responsible unless we were previously "militarisés." This necessary formality should have been carried out for us by the committee in Paris. However, to rectify the omission Madame Leygues lost no time in taking us to Bordeaux, and we were formally "militarisés" by M. Millerand, the Minister of War, who, regardless of professional etiquette, gave us in writing amusingly plenipotentiary powers! Needless to say we used these with discretion.

This our second visit to Bordeaux was made very interesting through the kindness of Dr. Bourgonnier, who showed us systematically over his large hospital containing 2000 beds. It is established in a large college for boys, and is as near perfection as any such military hospital can be. Bourgonnier has a genius for organisation and discipline, and from the admission room, with its admirable arrangements for cleansing and germ prevention, to the mortuary and pathological section, no detail has been forgotten. He has a staff of experts for each department—pathological, X ray, operations, record department, &c.—and he has laid contribution on all the available medical and surgical resources of Bordeaux. He showed us one block palisaded off with high railings and barbed wire where about 50 wounded Germans lay. All their wounds were serious, mostly compound comminuted fractures. It was touching to see his kindness to these men, whose crestfallen and depressed demeanour contrasted markedly with the cheeriness of the wounded French. Asked how many of the 2000 wounded (including many severe compound fractures) who had had to have amputation of arm or leg performed Bourgonnier answered "none." Tetanus was being treated by thorough antiseptic cleansing and dressing. Deaths in the hospital from any cause had been few: three Germans and no Frenchmen up to Oct. 13th. We were also shown over two other large hospitals at Bordeaux. At one the ether and iodine treatment recommended by Dr. Vernier, of Hyères, was being extensively employed for tetanus with apparently marked success.

I was told on good authority that in Bordeaux and the immediately surrounding district alone there were 40,000 wounded. This is, I believe, not exaggerated. At Agen, a small town of 21,000 inhabitants, there were, I know, 2000 wounded. This was included in the Toulouse district, which was very full early in October, but had, on the authority of the General commanding, 2000 empty beds by Nov. 1st. Immediately on our return to Villeneuve we installed an operating theatre, the room which had been allotted for that purpose in the largest of the Red Cross hospitals being unsuitable from a surgical standpoint. We were given a small but lofty ward with a good north light. This was thoroughly scrubbed and limewashed, and a wooden partition quickly run up, forming a useful ante-room. Marble-topped restaurant tables freshly enamelled served for operating-tables, and to hold basins, instrument trays, &c. A portable stove and sterilisers were quickly forthcoming. Money was no difficulty.

During the remainder of our stay we acted as consulting and operating surgeons. The practitioners gladly gave us every facility. With the greatest kindness and courtesy they turned the existing bad cases or any fresh severely wounded over to us, besides allowing us a general supervision over all the wards. As has been generally found everywhere, fresh bullet wounds healed quickly and kindly. Shrapnel frequently caused suppuration owing to the carrying in of fragments of clothing or to contamination from earth or clothes entering the ragged wounds. Among the cases we had under observation shrapnel and bullet wounds were in about equal proportion. It was not always easy to exactly tell what the projectile had been. We had no leg or arm amputations. Conservatism patiently and thoroughly carried out sufficed. Some finger amputations were necessary and extraction of irritating bullets. The careful dressing of large wounds, removal of sequestra, setting and thorough antiseptic dressing of compound fractures, scraping of sinuses and such like made up our operative work. We noted some extraordinary escapes. Two men were shot clean through the neck horizontally at the level of the upper border of the thyroid cartilage. Beyond the fact that one had had his recurrent laryngeal involved and was very hoarse, neither of them was a pin the worse. I had a case almost identical with the hand figured on p. 1174 of THE LANCET of Nov. 14th, except that the bullet entered the back of the hand and made an extensive wound of the palm. I considered that this was not due to a dum-dum but to the fact that the head and shaft of the second and third metacarpal bones were smashed and driven through the muscles and skin. It was suppurating profusely when I saw it first and causing intense pain. I removed several sequestra, thoroughly scraped it, swabbed it with iodine, and put the hand into a continuous boric bath. It healed well.

A word as to the nursing and feeding at these hospitals. It was excellent. Those southern women are extraordinarily adept. Though possessed of a comparatively meagre preliminary training, they had imbibed the aseptic idea, and their unofficious tenderness, natural skill, and charm of manner rendered them most suitable for the work they had to do. Their facility at massage was remarkable, and they faithfully carried out orders. Many of them were, of course, intelligent ladies, and they were not playing at nursing. The daily menus, and still more the appetising invalid cookery for special cases, were admirable. I consider the men were well nursed. The work of the general practitioners was most creditable and entirely voluntary, and once we had been properly accredited our help was unreservedly and gratefully sought by them.

We left at the end of our month as we had information that for the present no more fresh wounded were to be sent into that district. Any surgeon with some facility in French desiring to help in a capacity similar to that I have sketched and not expecting to get much major surgery should find a useful and helpful sphere—and incidentally a pleasant holiday—in France for months to come. There is a dearth of surgeons from causes already pointed out in your columns. Application should be made beforehand to the Croix Rouge Française, and all formalities should be strictly complied with so as to avoid vexation and delay. I am, Sir, yours faithfully,

Newport, Essex, Nov. 17th, 1914. J. ARTHUR BROWNE.

A PLEA FOR MORE CONSERVATIVE TREATMENT OF UTERINE APPENDAGES.

To the Editor of THE LANCET.

SIR,—One is impressed with the number of women nowadays who, for some reason or other, have been deprived of their reproductive organs, most of them for very weighty and necessary reasons. The modern gynæcologist has reduced the mortality of such operations to so small a percentage that it would seem that milder measures are often pushed aside as probably useless and tedious before they have been given a fair trial. These remarks, of course, apply chiefly to inflammatory conditions and the resulting adhesions. As illustrative of the class of case I have in my mind the following history is so unusual and instructive that I hope it justifies publication.

The patient, aged 33, had had three children, the first at full term and the second and third at seven months, all living. Six years ago her fourth pregnancy aborted at four months. There was considerable difficulty in extracting the fœtal head, and she had a sharp attack of pelvic inflammation in which the cellular tissue was largely involved. She was treated for some months by the usual methods, and an autogenous vaccine was also used over a long period. The infection was streptococcic. A purulent vaginal discharge, with occasional febrile attacks accompanied by pelvic pain, persisted, and early in 1911 she had an acute and definite attack of pyosalpingo-oöphoritis accompanied by a most profuse discharge. She recovered from this and tried a course of treatment at Ems. But at intervals she continued to have what may be termed "flares up," when the attacks were sufficient to cause considerable alarm.

Four consulting surgeons and gynæcologists of the highest reputation and standing expressed the opinion at various times that the patient would not be well until both tubes had been removed, and advised her to submit to the operation. A room at a nursing home was actually engaged and the date of the operation fixed, but as an example to all our British women in this present era she persisted that she meant to have as many children as it was possible, and that nothing would induce her to allow them to rob her of all such chances until absolutely compelled. Accordingly, her husband then took her to Paris and consulted Professor Pinard, who expressed his opinion to me that with absolute rest, long-continued hot douches, and rectal lavement she would get quite well, and added that he saw no reason why she should not become pregnant again. The former seemed possible, but the latter—considering the numerous repeated attacks of salpingitis, first in one tube, then in the other, and sometimes in both at once—seemed more than improbable. However, after two years' constant treatment she surprised everyone by becoming pregnant, and has now produced, with hardly any trouble from start to finish, a peculiarly healthy and fine infant at full term.

The patience and perseverance required would have been practically prohibitive to one of the working classes, but a history of this case may perhaps encourage greater patience on the part of some gynæcologists when treating any but the severest cases, and perseverance in treatment on the part of their patients when in a position to be treated for a sufficiently long period.

I am, Sir, yours faithfully,
Edward P. Furber, M.R.C.S. Eng.,
L.R.C.P. Lond.
Welbeck-street, W., Nov. 23rd, 1914.

INTRATRACHEAL ANÆSTHESIA.

To the Editor of The Lancet.

Sir,—Mr. Wilfred Trotter's letter in your issue of Nov. 14th raises some points of interest to which I should like to reply. In the first place I find that he has no objection to the use of the intratracheal method in certain cases of cancer of the tongue—in fact, that he has often used it himself. This is an unexpected but welcome admission, unexpected because it was, I submit, impossible to infer this from his article, in which the intratracheal method was briefly mentioned and quickly condemned. Mr. Trotter objects to its use solely in cases in which the growth is foul and ulcerating. I should like to convince him of the safety of the method even in these cases. I have not unfortunately an accurate record of the nature of the growth in all the cases, 48, mentioned in my letter of Nov. 7th, but I find that at least 12 of them are noted as being large ulcerating growths. It is highly probable that some of the remaining 36 were not clean, although it must be stated at the same time that in several cases the growth was on the lip or anterior part of the tongue, and in consequence very unlikely to come into contact with the laryngoscope. I think the danger of bruising or tearing the growth is exaggerated. The anæsthetist can, if he is careful, avoid rough contact with the ulcerating surface.

In the second place I find it very difficult to agree with Mr. Trotter that the introduction of the tube is followed by spasmodic inspirations. It seems to me that he does not give due credit to the strong defensive reflexes of the larynx and trachea which (unless deep anæsthesia is present) are at once brought into play by the presence of the catheter so that coughing ensues, is made more vigorous by the addition of the ether vapour, and continues until deepening anæsthesia cuts it short. So strong are the respiratory efforts that the catheter may be forcibly coughed out—this happened to me on one occasion, the catheter being expelled a distance of at least four feet—and every writer describing the technique draws attention to the necessity of holding the catheter in place. If anæsthesia is deep on the introduction of the catheter there is, in my experience, no perceptible change in the character of the breathing, certainly nothing of the nature of spasmodic inspiration. The addition of the ether vapour may not in this case call the cough reflex into play, but it does immediately provide a strong upward draught at the glottis which would dislodge any septic material in the neighbourhood.

With regard to Mr. Rupert Jones's cases in The Lancet of Nov. 7th (p. 1087), I do not think we are justified, after reading Mr. Hey Groves's letter in your issue of last week (p. 1220), in coming to the conclusion adopted by Mr. Trotter as to the origin of the lung infection.

Lastly, may I say that it was tracheotomy to which I took the objection that it increased the length of operation, not laryngotomy? The complications and difficulties of tracheotomy are the province of the surgeon. I feel, however, that catheterization is a simpler and less harmful procedure than either, and I am not convinced of the danger which prevents Mr. Trotter from adopting intratracheal insufflation in all his cases.

I am, Sir, yours faithfully,
Francis E. Shipway.
Queen Anne-street, W., Nov. 23rd, 1914.

IMMEDIATE MASSAGE OF SEPTIC LIMBS.

To the Editor of The Lancet.

Sir,—The immense number of septic wounds being treated at the present time is my excuse for advocating in print a line of treatment which must be well known to the majority of the medical profession. In spite of the fact that the treatment of septic infection of limbs by immediate massage is an old one, many people object to it on the ground that it "spreads the toxin," but on being asked if they have tried it they almost always answer No. My own practice is to massage the limb the day after it has been freely incised and drained, the limb being taken out of the bath for massage. This treatment must, of course, be carried out by a skilled masseur.

I am, Sir, yours faithfully,
Malcolm Donaldson, F.R.C.S. Eng.
Le Havre, Nov. 20th, 1914.

THE 2nd LONDON CLEARING HOSPITAL.

To the Editor of The Lancet.

Sir,—I should be very grateful if you would let it be known through the columns of your journal that the 2nd London Clearing Hospital is now being mobilised for service with the British Expeditionary Force and requires the services of two highly competent operating surgeons to complete its surgical staff. The clearing hospital, situated a little distance behind the fighting line, receives all the wounded of a division and is equipped to deal at once with the most serious cases. The officers appointed will receive commissions in the Territorial Force for the duration of the war.

I am, Sir, yours faithfully,
Chas. Monk,
Lieutenant-Colonel, I.M.S. (retired),
Officer Commanding 2nd London Clearing Hospital.
Duke of York's Headquarters, Chelsea, S.W., Nov. 21st, 1914.

SANATORIUM TREATMENT.

To the Editor of The Lancet.

Sir,—The comments of Professor Bang which you mention in The Lancet of Nov. 14th, p. 1159, on the results of sanatorium treatment are to my mind somewhat extraordinary. In the first place, I should like to mention that out of 800 cases received into this sanatorium no case which was definitely unable to work on discharge has recovered after going home; it is true that two cases have improved temporarily beyond all expectation. With regard to first-stage cases not doing so well as many more advanced cases the reply is obvious. It is seldom that a first-stage case is admitted to a sanatorium unless suffering from severe or fairly severe general symptoms; all the mild cases are treated at home and made into chronics, who may live for years in imperfect health, often capable of much improvement with a little rest. When the profession learns the proper way to treat an early case of phthisis with slight symptoms we may hope to get rid of the large number of chronics who are constantly about infecting the population.

The proper and best use of sanatoriums for the working class, at least, is to use them for the treatment of cases as early as possible, and they should not be allowed to work until either they have become favourable chronics or unfavourable acutes. It is more than probable that there is something radically wrong with the treatment at sanatoriums where so many have to return home before they even partially recover. The recovery of first stage cases without manifestly acute symptoms is usually uneventful, so much so that no belief in the existence of the disease remains at the end. An exception should be made with reference to children who usually require great patience to cure.

I am, Sir, yours faithfully,

EDWARD E. PREST.

Ayrshire Sanatorium, Nov. 17th, 1914.

PATRIOTISM OR ADVERTISEMENT?

To the Editor of THE LANCET.

SIR,—I presume that many members of our profession, like myself, have had sent to them a tin box for the collection of subscriptions in aid of the National Relief Fund. Upon this box or canister is an advertisement of a food for infants. It seems impossible to regard this otherwise than as a peculiarly ill-timed method of advertisement, and I hope members of our profession will resent it in an appropriate and practical fashion.

The box which was sent to me is on my consulting-room table, but the names of the advertisers and their wares have been carefully removed.

I am, Sir, yours faithfully,

HERBERT TILLEY, F.R.C.S. Eng.

Harley-street, W., Nov. 23rd, 1914.

THE WILD GIRL OF NAINI TAL.

To the Editor of THE LANCET.

SIR,—The story in the *Pioneer* to which reference has been made in THE LANCET was a gross exaggeration. The correct facts are these. An imbecile girl, aged about 10 years, was found strayed, and brought in by the police to the Crosthwaite Hospital. She was a very ordinary imbecile and showed no more signs of neglect than many other similar unfortunates. Her nails were not a quarter of an inch long, her hair was short and not matted, she ate ordinary food in the ordinary way when it was given her, she understood similar orders like "Sit down!" "Come here!" and even obeyed the ordinary Hindustani signs of beckoning. She had no unusual growth of hair, and though naturally enough was frightened in her new surroundings for the first day or so, there never was anything about her suggesting the wild human.

As I have said, she was a very ordinary imbecile, and has been sent to the lunatic asylum at Bareilly. I am, Sir, yours faithfully,

Naini Tal, U.P., India,
Oct. 9th, 1914.

T. HUNTER,
Major, Indian Medical Service.

THE WAR.

THE MENACE OF CHOLERA.

PERHAPS the most important item of medical war news during the past week or two has been the intelligence that cholera has appeared in various parts of Austria and Hungary. The authorities apparently succeeded in keeping the matter secret so long as it was confined to Galicia and Moravia: but it has now appeared in various parts of the dual empire, some hundreds of cases being reported in Vienna itself. This scourge always enters Europe from the East, and though the onset of winter is against its rapid propagation, the conditions of war now prevalent on the borders of Russia, Germany, and Austria undoubtedly render its rapid transmission westward a danger in the situation to be seriously considered and guarded against.

THE HEIGHT STANDARD AND RECRUITING.

A reduction in the minimum height of recruits has often been advocated. Under ordinary circumstances in our army the physical measurements required are increased or relaxed in stringency according to the supply of recruits available. Rajah Brooke of Sarawak wrote a few days ago urging that shorter men ought not to be excluded from defending their country: "They are assuredly not to be despised; they are more nimble than their higher brothers, and as for bravery no man can think they are wanting." The regulation requirements of 5 ft. 3 in. in height and 31 in. chest measurement can hardly be considered too stringent, especially as they may be relaxed in special cases at the discretion of the recruiting inspector. In the new bodies of troops raised for special service the precise measurements have not been insisted on, any man physically fit being accepted, and the age limit being extended to 38 years. We believe that the response to the call for men has been on the whole satisfactory up to the present, but there must be no slacking off. More men are still required to fill up the places in the front. The supply must be continuous, not a mere "dribble of reinforcements," but a steady influx of fresh troops to take the place of, and give much needed rest to, those who have been bearing the brunt of many weeks' hard fighting.

THE CASUALTY LIST.

The following casualties among officers of the Royal Army Medical Corps have been officially reported since our last issue:—

Killed: Captain Cecil Taylour Conyngham (in East Africa).

Wounded: Major A. W. A. Irwin, Captain C. J. Coppinger, and Lieutenant A. Watson. Lieutenant W. H. Lister is unofficially reported wounded.

COMFORTS FOR THE ROYAL ARMY MEDICAL CORPS.

There are now some 10,000 men of the Royal Army Medical Corps at the front, and a committee has been formed, with Lady Sloggett, wife of the Director-General with the Expeditionary Forces, as its president, for the purpose of sending "comforts" direct to the commanding officers for distribution. The committee will gratefully receive, pack, and forward such articles as cigarettes, tobacco, and woollen goods, which are urgently needed. Parcels should be addressed, carriage paid, to "R.A.M.C. Comforts," Royal Army Medical College, Grosvenor-road, London, S.W.; and gifts of money should be sent to the secretary of the Royal Army Medical Corps Fund, Lieutenant-Colonel F. W. H. Davie Harris, 124, Victoria-street, S.W. We cordially associate ourselves with the objects of Lady Sloggett's committee.

THE WOUNDED AT CALAIS AND DUNKIRK.

Our Special Sanitary Commissioner sends the following notes in continuation of those which we published from him last week. We would remind our readers that the wounded to whom he refers are not British soldiers, but principally those of our Belgian allies:—

Complaints have been made concerning the condition of the trains used for carrying the wounded. Certainly where such emergency arises that cattle-trucks, commercial vans, or cars constructed for the transit of merchandise have to be converted into ambulance wagons much hardship and discomfort ensue. The wounded remain on the stretchers that bore them from the field, and 12 such stretchers may be in one cattle-truck. Of course, also, there is no corridor by which intercommunication can be established between these trucks, and any attendants who accompany the train cannot go to and fro among the patients. The journeys are often very long and no proper sanitary conveniences can be supplied. Though there are thousands of willing hands in all the towns who would gladly bring food and whatever may be required to the stations where the trains stop, it is not always known when the wounded are coming. The state of things is rapidly improving, but there was a great deal of misery in many places before better organisation prevailed.

There are a number of specially constructed corridor ambulance trains now operating in Northern France in which the wounded can be properly nursed and fed during the journey. But it is not always possible to bring these trains up to the point at which they are wanted, and this at the right moment. Then it has happened too often that the number of wounded is much in excess of the proper accommodation available, when it becomes necessary to adopt any expedient so as to bring the wounded where they can be properly treated. I saw two ambulance trains and they were both corridor trains, and if in respect of the brightness and cleanliness that distinguish a well-kept hospital much was wanting, they were at any rate doing extremely valuable service.

The Cleaning of Ambulance Trains.

Whether it was the carnage of war or the prevalent talk of German Kultur, I do not know, but a picture of what the Germans really do well came to my mind. The supervision exercised over the cattle trains at the Berlin municipal abattoir recurred to my memory. For these trains there is a convex cemented flooring with gullies leading to drains at short intervals along the track, so that the dirt washed out of the trucks should not sink into and contaminate the subsoil. There is regular cleaning out of the trucks at these intervals. Big reservoirs, built high, give a good head or force to water delivered by a hose. A regular staff, with buckets containing a 5 per cent. hot solution of soda, scrubbed, mopped, and squeegeed the inside of every cattle van. This was done after every journey, and all the year round, irrespectively of the prevalence or otherwise of any sort of cattle disease. At this stage I do not wish to criticise the conditions of ambulance trains, nor do I for a moment mean that an ambulance train should or could be treated like a cattle train; but what can be done for cattle should be greatly improved upon when it is a question of men, especially of wounded men. In all the towns where ambulance trains stop there are numerous unemployed who for this reason or that are not with the colours. Work might be found for some of these in dusting, cleansing, washing, and disinfecting the ambulance trains, and as this war settles more and more into a tedious affair of trench fighting, horribly relieved now and again by furious local assaults, some such organisation will doubtless be evolved.

The Need of Scavenger Brigades.

Nor is this the only work that such a cleansing brigade would have to do. When they arrive at the end of their journey the wounded cannot, as a rule, be taken from the train to the hospital, or it may be the ship, that is to receive them. They have to be classified, and usually their wounds need fresh dressing. In earlier days they were put in the station waiting-rooms or laid on the platforms; but now at Calais, at Dunkirk, at other stations where I have been, and, doubtless, at many stations where I have not been, sheds formerly used for the storing of goods have been converted into depôts for the wounded. Here, at least, they are under shelter and can receive some attention. Then according to the accommodation available and the nature of each case the patients are placed in the ambulance motors or carriages waiting outside and driven to a ship or a hospital. But these sheds were not built as hospital wards, and they require a great deal of scrubbing and cleansing to make them suitable for the purpose. Thus a cleansing brigade might be very usefully employed here as well as in the trains. Besides, we must always contemplate the possibility of some serious epidemic following in the wake of war, though the freedom of the allied forces from this scourge has so far been remarkable—or, perhaps, it would be more just to describe it as the proper return for extraordinary prevision and scientific labour. Therefore, the drilling of a sufficient number of men to be efficient cleansers and disinfectors is a very necessary precaution. Indeed, so far as my Dunkirk and Calais experience goes, I did not hear any demand for additional surgeons, only for a few more consultants. Some extra-trained nurses and dressers would be welcome; but the need, the great, urgent, crying need, was, it seemed to me, for scavengers and people to brush and to scrub. For this is a dirty war. The menial work is that which is most needed.

Railway Sheds as Depôts for the Wounded.

At the request of the Wounded Allies Relief Committee I drew up a report on the condition of the Dunkirk railway sheds where the wounded are received. The committee at its last meeting considered it advisable to withhold this report from publication, at least for the present—and I was not surprised. Moreover, some improvements had already taken place before it was presented. Some beds had been provided where formerly there was only straw, and straw that was not changed too often. Nor was the attention given to the wounded in earlier days as prompt as it should have been. This now is improved, but still needs improvement. There is, however, every reason to hope that, when proper representations have been made to the authorities concerned, the necessary measures will be taken. In the meanwhile everyone is anxious not to offend justifiable susceptibilities. This is the more necessary as the position is very complicated. Of course, being within 20 miles of the German trenches and a French town, the French military authority is the supreme authority in Dunkirk. On the other hand, Dunkirk is within five miles of the Belgian frontier and that small corner of the little kingdom where what remains of the heroic Belgian army is defending its native land with flood, fire, and sword. Therefore, a portion of the Dunkirk town hall has been assigned to the Belgian Minister of War, who is also the Prime Minister. From here the Baron de Broqueville directs and sees to the needs of the Belgian army. With a motor he can reach the advanced posts in less than an hour. On the other hand, all those who have a short release from duty in and near the fighting line in Belgium come into Dunkirk to recuperate, to enjoy a good meal and some rest. Thus though this is a French town, the scenes around are such as to give the place a Belgian appearance. So far as the British contingent is concerned, Dunkirk is a naval rather than a military post. Thus, what with the French military command, the British naval command, and the Belgian Premier and Minister of War, all exercising authority, the desire to obtain a scrubbing brush or a little carbolic acid may assume the intricate aspect of a complicated international diplomatic and military problem.

British Volunteer Hospitals.

Fortunately there is a levelling and an assimilating effect produced by war which wears down rough corners. Differences disappear in the face of results. The Society of Friends, Millicent Duchess of Sutherland, and others have stepped into the breach, and now there are hospitals, admirably situated on the seashore, where French, British, Belgian, and German soldiers receive every attention from skilled English surgeons and highly-trained English nurses. All this seems to be in defiance of order and regularity, but in practice it works well, for it has largely contributed to save life and mitigate the terrible sufferings of the wounded.

British Help.

Further, this is a good example of the position in which the British nation stands in regard to the care of the wounded. There is no fighting in England, but there are any number of trained nurses and medical men who are most anxious to give their services. Some of them have gone over to France or to Belgium in the hope of being able to do something, but in war time the isolated individual is always looked upon with suspicion; therefore these volunteers had better strive to work for and through the well-known and accredited institutions. On the other hand, these latter should open the gate wide to willing and competent helpers. The French, on their side, must not take it amiss if we occasionally offer to do some of their work for them—and that work would have been infinitely more valuable if a percentage of educated Englishmen could speak intelligible French, and understand it when spoken. Our allies must just take us as we are and let us help—it may be in a somewhat irregular but none the less effective manner. Their task has been so gigantic that it is no stricture on them to say that certain things have been wanting here and there. So far as this has been the case with regard to the wounded, there is voluntary help forthcoming in Great Britain eager to go to the front. We can send surgeons and nurses out of all proportion to the number of British troops at the front. There are wealthy persons in each division of the United Kingdom eager to do something, willing to provide motor-cars, surgical instruments, and even salaries so that trained nurses can go to the continent and not be obliged to ask for payment from those whom they serve. This our allies should look upon as our further attempt to come to their aid without hesitation or stint. "We no not wish to be officious, we do not wish to interfere; but our hearts bleed and we do want to help." I quote these simple words, uttered to me, because they so exactly represent the situation.

THREE MONTHS' STAY IN DRESDEN.

The following communication has been received by us from an English pathologist who was constrained to remain in Dresden during the earlier part of the war:—

At the outbreak of war on July 25th between Austria-Hungary and Serbia the writer was in Vienna. During the following week I was allowed to attend the hospital practice at the Van Noorden Institute, and during this time was treated with every possible courtesy. At the end of the week the work of the hospital had been so curtailed as a result of numerous absentees that it served no good purpose to remain in Vienna, and in the last express train (as I understood) I travelled to Dresden during the night of August 2nd with the intention of reaching England. On the following day, after visiting Friedrichstadtkrankenhaus in Dresden, where I had previously been working for a period of six months, I was asked to assist in the pathological department, as the assistant staff had with two exceptions left to join their several regiments. However, as during the day it had been decided by the local authority to allow no foreigner to enter the hospital, I was relieved of an awkward situation, and decided to continue the journey to England. It may be here remarked that the general opinion was, as far as could be judged from the newspapers, that England would probably not join in the war. Unfortunately, being arrested as a suspicious person on the evening of the 3rd and being set free through the good offices of the professor under whom I had been working, I missed the last train to England that day. I got out of Dresden on the night of Tuesday, August 4th, and having some knowledge of the German tongue, I was able to avoid declaring my nationality to the numerous passengers who were travelling in the military trains to their various destinations. At Hanover on Wednesday afternoon, August 5th, an examination of tickets and passports led to a detention of some eight hours in company with several Russian peasants. The officer in command of the watch was cautious, and in conjunction with his men pointed out the iniquity of declaring war on cousins and co-religionists—i.e., Protestants. My passport and tickets were taken away, and permission to seek out a hotel for the night was given, with a strong recommendation not to declare my nationality, or a bed would certainly be refused, and that, as the people were very bitter against England, I might be molested. A soldier of the watch very knidly offered to find me a hotel and to guarantee me protection. The proprietor of the hotel, after having declared his views on England's treachery, introduced me to his relations, some of whom in uniform were about to leave for the front. A Landwehrmann present assured me that he had then no personal grudge against me, but he would give himself the pleasure of introducing his bayonet to me if we perchance met later in Belgium. Not accepting the offer to work at the getting in of the harvest, I was allowed at my own request to return to Dresden on the following day in the company of reservists and German refugees from Belgium. Being more than once told I looked English, the fact without a direct denial passed unchallenged, and having mentioned that I studied medicine, mutual confidence was established after a discussion as to the best methods of treatment for the three cases of gleet amongst my companions.

For the remainder of the next three months I made an enforced stay in Dresden, but I was put to no more inconvenience than that caused by having to report myself twice weekly to the police authorities and to remain within the city boundaries. The definition of the city boundaries was seemingly elastic, and if inadvertently the limits were passed there was in Dresden apparently no resulting punishment. Throughout the police authorities were uniformly courteous. After Sept. 2nd I was even allowed to take photographs, with the exception of public buildings or railway works.

Through the German papers we in Dresden obtained rather a sorry view of the British nation. Articles appeared regularly to indicate the extent of our guilt in declaring war on Germany, numerous examples of political hypocrisy in our present and past national history were given, and our envy of Germany's commercial prosperity was said to underlie all the measures taken. South Africa, we were informed, had risen to throw off the British yoke, and the Mohammedan population of India and Egypt were about to utilise their opportunities to obtain their freedom. Recruiting, we learned, was slow in England, despite the large monetary offers to those willing to enlist. Public opinion against the British was influenced largely by two factors: the alleged employment of dum-dum bullets by the English and French and accounts of "inhuman" treatment of the civil German prisoners. An example from the Berlin *Lokal-Anzeiger* of Sept. 10th may be quoted: "Cartridges bearing the stamp Art. Dept. Ive. were found. The cartridges are therefore of English manufacture. Unabbreviated it would read: Artillery Depôt Ive (the corresponding French description would be: Dépôt d'Artillerie Ive). There is a small town Ive in the county of Cornwall (St. Ives was probably meant). The presence of an artillery depôt there was previously unknown to us. ......"

Quoting from the *Hamburger Fremdenblatt* of Oct. 26th and describing the conditions at Newbury: "Eight to ten Germans lay in a horse-box in old straw. Each man received two thin blankets, nothing more. At 5 o'clock in the afternoon everyone had to crawl into the straw. The prisoners must cook their own food. ...... A watery soup with the addition of a small amount of fat contained perhaps for each prisoner 1 cubic inch meat. The amount of nourishment was altogether inadequate. Anyone complaining was given three days on water and bread. ......" At the outbreak of war the enthusiasm for war was apparently intense, and at the beginning of November showed no signs of waning. The significance of the retreat from Paris was obscured by the obvious progress in Belgium and in Poland. From time to time detailed accounts of atrocities, judicially investigated, at the hands of the Russians, French, and Belgians, were published. After the British retreat from Mons there was in the press a general tendency to despise the British soldier, but in the latter months it was frequently mentioned that our infantryman was clever at entrenching himself, that he continued to shoot accurately whatever was occurring around him, and that he was exceedingly difficult to dislodge once he had taken up any position.

It will be gathered from our correspondent's letter that he had an anxious and sometimes a very painful time, but that on the whole he was very well treated. His great asset was, of course, his knowledge of German.

THE BRITISH RED CROSS SOCIETY.—The summary of the work for the week ending Nov. 24th states that the number of hospitals accepted by the War Office to date is 474, containing beds for 14,061, including 1312 beds accepted during the past week, and distributed among the Army Commands as follows: London, 818; Southern, 4355; Aldershot, 787; Eastern, 3657; Northern, 2336; Western, 1901; Irish, 207. A number of Red Cross Voluntary Aid Detachments are being utilised in connexion with these hospitals.

At the Netley Red Cross Hospital, which is being gradually extended, a large number of huts have now been opened. The dining hall for patients, erected through the donation given by Mr. Augustus Langham Christie, is now complete, and is a fine commodious building. The medical officers have moved into their huts, and one hut has been arranged in cubicles as a ward for sick officers. Owing to an urgent message from the War Office for as much accommodation as possible for Indian sick and wounded, two extra huts have been opened and the recreation room has been equipped temporarily for 50 patients, thus giving accommodation for 130 patients who arrive this week; 360 beds are now available. Two members of a women's Voluntary Aid Detachment are now doing duty in the Hampshire hut.

Motor ambulances have been coming in. During the week past 12 motor ambulances and 3 lorries have been shipped to Boulogne, while 50 motor ambulances have been sent to Newmarket and handed over to the officer commanding, Royal Army Medical Corps.

Nurses have been regularly detailed for duty. One nurse was posted for duty at Boulogne on Nov. 23rd. Twenty nurses were also detailed for duty in the following Home Military Auxiliary Red Cross Hospitals: Nov. 18th: Milton Hill, 2; Swanage, 2; Reigate (Ward), 1; Newbury (Lady Rosemary Portal) Hospital, 2. Nov. 19th: Louth, 1; Mayfield, Sussex, 1; Emsworth, 2. Nov. 20th: Kineton (Lady Willoughby de Broke), 1; Whitchurch (Lady Portal), 1. Nov. 21st: Spondon, 1: Hayling Island, 1; Whitchurch, 1; Duffield, 1; Gerrards Cross, 1. Nov. 23rd: Louth, 1. Nov. 24th: Thane, 1.

Sir Frederick Treves and Sir Rowland Bailey have at considerable length examined the plans of the Waterloo Hospital in association with the architect of the Office of Works. It will be staffed by 25 surgeons and 8 physicians chosen from the leaders of the profession in London who are available. The commandant and matron will be chosen by the War Office. Queen Alexandra and the Princess Victoria have made gifts of money for the equipment of beds, in addition to which 171 beds have already been endowed, His Majesty the King providing four. Each ward will contain about 360 beds and will be a complete hospital in itself, with its own operating theatre and surgical dressing room.

PROFESSIONAL CLASSES WAR RELIEF COUNCIL: MATERNITY NURSING HOME.—The Maternity Nursing Home for Wives of Professional Men, in connexion with the Professional Classes War Relief Council, to which we have already alluded in these columns, is now ready to receive patients. The home is primarily intended for the wives of professional men who are hard hit by the war, special preference being given to those recommended by the husband's professional society or institution. Wives of officers now serving are also eligible to be received. A small weekly charge is made to patients which is inclusive of all expenses. The voluntary medical staff and house committee include Sir Francis H. Champneys, Dr. Mary Scharlieb, Dr. H. J. F. Simson, Dr. Maud Chadburn, Dr. Florence Willey, and Dr. C. Gould May, and patients may also be attended by their own doctor, provided that his services are also rendered free of charge. The home is situated in No. 14, Prince's-gate, S.W., the beautiful house lent by Mr. G. Pierpont Morgan for the purpose, and contains every comfort and opportunity for good nursing. Wide publicity is required in order to insure the successful establishment of this home, and medical practitioners are asked to assist by making its existence known to those needing this type of help. Full particulars can be had on application to Mrs. Chambers, Maternity Nursing Home, 14, Prince's-gate, S.W.

CHLOROFORM IN FRANCE.—We called attention in THE LANCET for Nov. 7th to an alleged shortage of chloroform in the French war hospitals in various localities. Colonel F. N. Maude, C.B., and Vice-Admiral D. M. Riddell have now published a joint letter in the press positively asserting that such is the case, and asking for donations to a fund to enable an emergency anæsthetic centre to be established immediately, so that anæsthetics can at once be dispatched to hospitals in need. Donations, large or small, should be sent to Mrs. William Sharp, 49, Cambridge-street, Hyde Park, W., honorary secretary, or to Mrs. D. M. Riddell, 15, Mount-street, Grosvenor-square, W., honorary treasurer of the fund.—Lady Bagot, R.R.C., honorary secretary of the Church Army war hospital, who is working amongst the wounded at Dunkirk, reports that the shortage of nurses and the lack of chloroform there have rendered the situation one of sore necessity. In response to her urgent representations the Church Army have sent a large consignment of chloroform.

SUSSEX AND THE WOUNDED.—A local correspondent writes:—"Sussex is worthily fulfilling its part in succouring the wounded soldiers, both British and Belgian. In addition to having in its midst the Second Eastern General Hospital at Brighton, the other hospitals in that town and in all parts of the county have so generously offered their help that to enumerate them would be simply to give a catalogue of the various institutions. The Second Eastern General Hospital at Brighton is a collecting centre for the wounded. At one time early in November the whole of the 600 beds forming this hospital, including the annexe at the council school near by, were occupied. Private hospitality in the county has also been great, and patients have been distributed in all directions. In Hove a large private house has been lent for the purposes of a hospital by Mr. d'Avigdor Goldsmid, J.P., and the expense of fully equipping it for the reception of 20 officers and men has been borne by Mrs. Barney Barnato. No expense has been spared and the War Office readily accepted the gift. The medical staff comprise Major W. A. Bowring, consulting physician, Dr. E Hargrave Booth, and Mr. G. D. Kerr, while the matron is Miss Napier Ford, daughter of the late Dr. Alfred Napier Ford."

RED CROSS HOSPITAL FOR DUBLIN.—The scheme for the temporary enlargement of the several Dublin hospitals to accommodate wounded soldiers has been abandoned on account of the impossibility of all the hospitals joining. In the alternative the city of Dublin branch of the British Red Cross Society has decided to proceed with a scheme for building temporary additions to the existing King George V. Military Hospital. An appeal has been issued for funds for this purpose. The intention is to erect a number of pavilions, not exceeding ten in all, each capable of holding 50 beds. The approximate cost of each pavilion will be £1000, and the number to be erected will depend on the response to the appeal. As each pavilion is completed it will be handed over to the military authorities.

THE WOUNDED AT PORTSMOUTH.—Our correspondent writes: "It has been found necessary to increase the accommodation of the Fifth Southern Territorial Hospital. Accordingly, two wards in the Royal Portsmouth Hospital, each with 30 beds, and wards at the Portsmouth union infirmary with 80 beds, have been handed over to the military authorities. The Territorial staff attend to these patients. At the latter hospital most of the cases are surgical and came straight from the front, the dressings having been changed at the field dressing stations and at Calais. There have been two cases of tetanus—one fatal—both after severe shrapnel wounds. Three private houses, providing about 100 beds, have been generously placed at the disposal of the Red Cross authorities for the use of convalescents and cases of minor injuries among our soldiers and allies. Many have been sent from the Alexandra Military Hospital at

Cosham. The medical men and nurses give their services voluntarily, and so also do the orderlies and cooks. The Government make a small grant per soldier per day, which is insufficient to meet the necessary expenses. There are at present representatives of five different nations in Netley Hospital—British, Indians, French, Belgians, and Germans. This is the first time in the history of the hospital that such a thing has happened."

THE WOUNDED SOLDIERS IN BELFAST.—"Of the 58 wounded soldiers who came to the Royal Victoria Hospital," writes our Belfast correspondent, "21 have left convalescent, and of the 30 who were located in the Military Barracks a good number have also left. At the Royal Victoria Hospital, in the discharges from the wounds no anaerobic organisms have been found (as might be expected from the interval that elapsed between the infliction of the injuries and the arrival of the wounded at the hospital), but streptococci of a peculiar strain have been isolated. The committee of the King Edward VII. Memorial (which is to take the form of a block at the Royal Victoria Hospital for X ray and vaccine therapy) have made a special grant to commence work in the pathological department of the hospital, until the new building is completed."

THE students of the Schools of Surgery of the Royal College of Surgeons in Ireland are sending cigarettes, &c., to the students, Licentiates, and Fellows of the College at present serving with His Majesty's Navy and Expeditionary Forces. In order that none of the "old boys" shall be forgotten readers are asked to send names to the Registrar of the College.

2ND (RESERVE) LONDON SANITARY COMPANY.—An additional Reserve Company is being raised for the 2nd London Sanitary Company, R.A.M.C.(T.), and there are a few vacancies for officers. It is essential that officers be medical men with Public Health qualifications. All applications should at once be made to Captain C. M. Fegen, who is now raising this new company at the Duke of York's Headquarters, Chelsea, S.W.

Lieutenant-Colonel A. G. Hamilton, R.A.M.C. (T.F.), Officer Commanding Welsh Border Mounted Brigade Field Ambulance, Drill Hall, Bungay, East Suffolk, writes to say that he will be glad to hear from any medical man wishing to obtain a commission in the Royal Army Medical Corps (Territorial Force). There are several vacancies in the Imperial Service Unit now stationed at Bungay and in the Reserve Unit at Chester. Men joining for the period of the war only obtain an allowance of £20 for outfit, and those joining as Territorial officers for four years receive £40. In both cases a grant of £7 10*s.* is made for the purchase of camp kit. Pay and allowances are as in the Regulars.

EAST ANGLIAN PRACTITIONERS' MOTOR AMBULANCE.—Dr. Arthur Greene and Dr. J. T. C. Nash issued last month an appeal to their colleagues in the counties of Norfolk, Suffolk, and Cambridge, and the Isle of Ely for funds for the provision of a motor ambulance. A generous response has been obtained, and the total amount subscribed up to the middle of last week was upwards of £300, while many of the donors have promised to increase their contributions if necessary. The subscription list will remain open until the end of this month for any other medical practitioner who may wish to contribute.

VEGETABLES FOR SOLDIERS AND SAILORS.—An excellent movement has been started for supplying the men with antiscorbutic food. A Vegetable Products Committee has been formed, with Lord Charles Beresford as president, for the purpose of collecting and delivering fresh fruit and vegetables, jams, preserves, &c., and supplying them to army camps and stations, to warships and hospitals. 2000 cases have already been despatched to the North Sea, and with increased support the work might be much extended.

MOTOR-CARS FOR THE FRENCH RED CROSS.—The aim of the British Ambulance Committee to the French Red Cross, whose headquarters are Wimborne House, Arlington-street, Piccadilly, W., kindly lent by Lady Wimborne, is to make up the deficiency in the number of motor-cars available for ambulance work in France. In this way it is hoped to obviate the delay in transport from the front, which has resulted in much suffering to the wounded of our gallant ally and to save many who would otherwise perish. As a result of the appeal mentioned in THE LANCET of Nov. 14th £15,000 were subscribed within a week, while motor-cars and contributions continue to be received.

FISHMONGERS' HALL HOSPITAL.—In addition to the temporary hospital for officers which has been so admirably equipped at Fishmongers' Hall, the City branch of the British Red Cross Society proposes to establish another hospital of 100 beds in a large building close at hand, in Upper Thames-street, which has been placed at its disposal by the Pearl Assurance Company. In the brief account of the opening of the hospital at Fishmongers' Hall in THE LANCET of Oct. 17th it should have been stated that the honorary visiting physician in charge of the medical cases is Dr. Arthur T. Davies, senior physician to the Royal Hospital for Diseases of the Chest.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

THE General Council of Medical Education and Registration began its winter session at its offices, 299, Oxford-street, W., on Tuesday, Nov. 24th. The President, Sir DONALD MACALISTER, was in the chair.

New Member.

Dr. E. MAGENNIS took his seat as representative of the Apothecaries' Hall of Ireland for one year from August 1st, 1914. He was introduced by Sir Lambert Ormsby.

President's Address.

Sir DONALD MACALISTER then delivered the presidential address, beginning by pointing out that the Council was meeting for the hundredth session, but that there was no temptation to improve the occasion by reflections on the Council's past history when new history was in the making day by day. He made reference to the death of Sir Christopher Nixon and to the retirement from the Council of Dr. Adye-Curran and the election in the place of the latter of Dr. E. Magennis, Governor of the Apothecaries' Hall of Ireland. He alluded also to the absence of the General Registrar, Mr. Norman King, due to the fact that, holding the rank of major in the London Rifle Brigade, he had volunteered for foreign service. Mr. A. J. Cockington had been appointed, he said, Acting Registrar, and had discharged the duties to the complete satisfaction of the President and the Treasurers. Sir Donald reported the postponement of the new edition of the British Pharmacopœia, and of the regular inspection and visitation of the qualifying examinations, it being foreseen that during the next year occasion will arise for holding special examinations at other than the usual times. Dealing with this point he continued :—

Communications were received from several professional authorities inquiring as to the propriety of modifying or suspending some of the existing regulations in the case of students whose regular course of study for a medical qualification might be interrupted by reason of military service. The Executive Committee thought it right to intimate, by means of a circular addressed to all the licensing bodies, the answer it gave in the name of the Council to the general question thus raised. In view of its importance to the public and to the profession I think it well to repeat here the words of the answer :—

"With regard to the courses of study and examination prescribed for professional qualifications, it is the statutory duty of the General Medical Council to secure the maintenance of such a standard of proficiency as shall sufficiently guarantee the possession by candidates of the knowledge and skill requisite for the efficient practice of their profession. To this end the Council has formulated, for the guidance of the licensing bodies, a series of recommendations respecting such courses. These recommendations represent in general terms the minimum curriculum which, in the Council's opinion, should be required by the licensing bodies; and the Council notes with satisfaction that the regulations of the several bodies give effect to them. Cases may arise in which, during the present national emergency, the bodies deem it expedient to modify or suspend the application of the regulations to particular candidates; but the Council expects that all such cases shall be duly recorded and reported to the Council in the usual way. The Council feels sure that, in dealing with applications for modification or suspension of their regulations, the bodies concerned will recognise the importance, in the public interest, of maintaining unimpaired the present standard of knowledge and skill required of all who seek to be admitted to the status and privileges of registered practitioners; and will accordingly agree with the Council that it is desirable to secure, in every instance, that the requirements of the minimum curriculum are substantially fulfilled."

We have reason to believe that this statement has commended itself to the authorities concerned and to the profession at large. Multitudes of our medical brethren have nobly offered themselves for service with our troops at home and abroad. Many have already laid down their lives in the performance of that humane duty. The toll of war is not yet complete. We must face the certainty that ere long the ranks of our profession will be sadly depleted. Ample reserves are necessary to supply the places of those who fall on the field of honour. These reserves will be constituted by those whom we are now admitting to the status and privileges of registered practitioners. We shall best honour the memory of the fallen, and most surely safeguard the welfare of our forces and our people, if we do all in our power to secure that the men who enter the profession now are as fully and efficiently trained as their predecessors for the service they will soon be called to render. The need for efficient physicians and surgeons in the field and at home is not less urgent than the need for efficient soldiers and sailors. I have felt it my duty to press this consideration on senior students, who, though they have nearly completed their curriculum, are ready to forego the prospect of early qualification and to enrol themselves straightway in the combatant forces.

It is currently reported that, owing to the war, the number of students of all years enrolled for the present annus medicus is much below the average. If this be true, the risk of a serious shortage in the future supply of qualified practitioners would appear to be imminent. The data in the possession of the Council do not enable me to furnish an answer to the inquiries that have reached me from various public authorities interested in the subject. I have therefore thought it desirable to procure, so far as I could do so on my own responsibility, materials for a trustworthy estimate of the aggregate numbers likely to be ready for qualification in the next two or three years. The statistics, if I succeed in obtaining them, may prove of value from more than one point of view.

An inevitable dislocation of civil practice, both under the National Insurance Act and in general, arose in August and September from the mobilisation of practitioners, attached as surgeons to military hospitals and to Territorial and other service units. We have gratifying evidence that throughout the country the fraternal spirit shown by their colleagues did much to diminish the resulting difficulties experienced by such practitioners in providing for the care of their patients. In most localities a temporary working arrangement has been made by which the needs of the civil community will be met for the present. Plans have moreover been devised, in consultation with the National Insurance and the military authorities, which may, it is hoped, have the effect of removing certain defects in existing arrangements that actual experience has made manifest. The Executive Committee has had submitted to it various proposals bearing on these subjects, and so far as they lay within its province have offered advice upon them.

The magnificent rally of the Overseas Diminions to the defence of the empire has cheered but not surprised us at home. Their troops, fully equipped for service in Europe, are accompanied by a number of able and efficient surgeons. In virtue of the reciprocal relations which the Council has succeeded in establishing throughout the greater part of the empire, the majority of these surgeons are qualified for immediate registration at home, and are thus eligible for commissions in the Army Medical Service. Unfortunately some of the Provinces of Canada have so far omitted to entertain the overtures for reciprocity which this country has made to them. The result is that certain of the surgeons, fully qualified under the provincial law, find themselves debarred from acquiring what may be described as an Imperial status in the British Register. The remedy lies with the provincial authorities. I am not without hope that the representations which have been addressed to these authorities, in the interest of the Imperial services, will induce them to consider afresh the question of reciprocity. The war has made it clear that account must now be taken of its Imperial as well as its local aspects.

In India the legislation for the regulation of medical practice, of which I spoke last May, has now been extended to Madras. Communications from other parts of India bearing on the same subject have been under the consideration of the Executive Committee, and have been promptly dealt with. Negotiations with the India Office and the Government of India, which were entered into at the instance of the Examination Committee, in relation to Indian students of medicine and to members of the subordinate medical services, are still proceeding.

Sir Donald MacAlister then pointed out that the necessary preoccupation of Parliament with measures of emergency had prevented progress with the Midwives (Scotland) Bill and with the Privy Council measure for improving the procedure in the elections of the Direct Representatives. He said that the Highlands and Islands (Medical Service) Board had formed regulations for that service which contained no proposals to which the Council could object, and alluded also to the fact that certain unprofessional methods and laxities in the giving of certificates, which had been noted among practitioners in connexion with the carrying out of the National Insurance Act, had ceased to occur. He continued:—

On August 4th, when war was declared, the House of Commons ordered to be printed the report of the Select Committee on Patent Medicines.[1] The findings and recommendations of the committee deserve the Council's most careful attention. They testify in vigorous terms to the existence of a "grave and widespread public evil," and of an "intolerable state of things," for which new legislation, "rather than merely the amendment of existing laws, is urgently needed in the public interest." The Council, at the instance of its Unqualified Practice Committee, to which this report has been referred, has more than once expressed similar conclusions; but hitherto without practical result so far as the Legislature is concerned. It is earnestly to be desired that even in days like these, when the conservation of the public safety is the paramount objective of the Government, some earnest thought should also be given to the conservation of the public health, which is preyed upon by insidious and unscrupulous mercenaries.

The report of a Departmental Committee of the Board of Education, appointed to consider the "practice of the Board with regard to the acceptance of certificates from unregistered practitioners in dentistry," which was issued in July, may be taken as an indication that the State authorities recognise some at least of the dangers of *laissez faire* in the matter of unqualified practice. After stating that, "whatever may have been the intentions of Parliament in passing the Dentists Act of 1878, the position now is that no person may describe himself as a dentist or have his name inscribed in the Dentists' Register who has not obtained the qualifications required by the body entrusted by the State with the charge of the Register," the Departmental Committee adds: "It would very ill become the Board of Education to adopt a lower standard of general or special education than the minimum prescribed by the State." And the Committee's unanimous recommendation is to the effect that the Board should not agree to the request that the certificates of unregistered practitioners "should be accepted equally with those of registered dentists."

The recent changes in the regulations for death certification, issued by authority of the Registrar-General, mark a similar advance in the official position. We have reason to regret that progress is still so slow. But we have reason also to persevere in our efforts to accelerate it. *E pur se muove.*

Dr. LITTLE, in moving a vote of thanks to the President for his address, congratulated him on the fact that he had managed to leave Germany when the war broke out.

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[1] THE LANCET, Sept. 5th (p. 653) and 12th (p. 702), 1914.

Penal Cases Committee.

Dr. Little was elected to the vacancy on the Penal Cases Committee occasioned by the death of Sir Christopher Nixon.

Degrees of Allahabad University.

The Executive Committee reported that it had considered an application from the University of Allahabad for the recognition of its degrees of M.B., B.S., for registration in the Colonial List of the Medical Register of the United Kingdom, and had adopted the following resolution :—

> That any person who holds the degrees of M.B., B.S., of the University of Allahabad shall be entitled to be registered in the Colonial List of the Medical Register, provided he satisfies the Registrar of the General Medical Council regarding the other particulars set forth in Part II. of the Medical Act, 1886.

Restoration of Name to the Medical Register.

The PRESIDENT announced that the Acting Registrar had been directed to restore to the Medical Register the name of Mr. Walter Randall Knightley.

The Council adjourned.

WEDNESDAY, NOV. 25TH.

The Council resumed its sittings at its offices, 299, Oxford-street, W. Sir DONALD MACALISTER, the President, was in the chair. The whole of the sitting was occupied with the hearing of charges against practitioners.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At a Congregation held on Nov. 21st the following medical degrees were conferred :—

M.D.—L. M. Routh, Caius ; and C. Mackenzie, Emmanuel.
M.B.—J. Deighton, Trinity.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated :—

Surgery.—W. Brown (Section II.), Oxford and King's College Hospital; C. H. Fischel (Section II.), Middlesex Hospital; G. F. Malden (Sections I. and II.), Royal Free Hospital ; H. R. Partridge (Sections I and II.), Leeds ; T. J. R. Scholtz (Sections I. and II.), Amsterdam ; and T. R. Scott. Edinburgh.

Medicine.—J. C. P. Bayley (Section II.), Manchester ; H. A. Cottin (Sections I. and II.), Caracas and Middlesex Hospital ; C. E. Clarke (Sections I. and II.), Bombay ; H. Morrison (Sections I. and II), St. Mary's Hospital ; H. R. Partridge (Sections I. and II.), Leeds ; C. H. Philips (Sections I. and II.), London Hospital; and F. Simpson (Section I.), Charing Cross Hospital.

Forensic Medicine.—R. H. Chadwick. Leeds ; H. A. Cottin, Caracas and Middlesex Hospital ; C. S. Dodson, Cambridge and University College Hospital ; C. J. G. Exley, University College Hospital and Leeds ; and J. D. Ferguson and H. R. Partridge, Leeds.

Midwifery.—C. E. Clarke, Bombay ; R. Curle, Guy's Hospital ; H. R. Partridge, Leeds ; and C. H. Philips, London Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery :—J. C. P. Bayley, W. Brown, C. H. Fischel, G. F. Malden, and H. R. Partridge.

UNIVERSITY OF LONDON.—At the Third (M.B., B.S) Examination for Medical Degrees for internal and external students held recently the following candidates were successful :—

Honours.—*Richard Alun Rowlands, London Hospital ; and †Douglas H. D. Wooderson, B.Sc., St. Bartholomew's Hospital.

* Distinguished in Medicine.
† Distinguished in Midwifery and Diseases of Women.

Pass.—Frederick Hubert Bray, London Hospital : Henrietta Frances Davies, London (Royal Free Hospital) School of Medicine for Women ; Arthur Rawdon Carrington Doorly, St. Thomas's Hospital ; John Beatson Dunning, Guy's Hospital ; Una Griffin, London (Royal Free Hospital) School of Medicine for Women ; Francis Joseph Hallinan. Charing Cross Hospital ; Mary Esther Harding, London (Royal Free Hospital) School of Medicine for Women ; Daniel Thomas Harris, Victoria University of Manchester ; Jessie Eva Hart, London (Royal Free Hospital) School of Medicine for Women ; Clement Hoyle Heppenstall, University of Leeds ; Rustam Merwan Kharegat, University College Hospital ; William Morris Lansdale, Guy's Hospital ; Leon Levene, University College Hospital ; Andrew Carey McAllister, King's College Hospital ; Helen Marion Macpherson Mackay and Ethel May Magill, London (Royal Free Hospital) School of Medicine for Women ; William John Morris University College Hospital ; Margaret Russell Paterson and Edna Mary Powell, London (Royal Free Hospital) School of Medicine for Women ; John Bromley Rawlins, St. Mary's Hospital ; Reginald Hugh Simpson, St. Bartholomew's Hospital ; Grace Stapleton, London (Royal Free Hospital) School of Medicine for Women ; Ernest Haines Walker. St. Thomas's Hospital ; and Thomas Burges Welch, St. Bartholomew's Hospital.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Army Medical Officers and Income Tax.

SOME concession in the matter of income tax is to be made by the Government in the Finance Act to medical officers who have joined the armed forces of the Crown in consequence of the war. Professional men are assessed on an average of three years' earnings, but it was pointed out during the debate in committee on the Finance Bill on Tuesday evening that it would be most unfair to apply this method of assessment to men who for a large part of the current year have sacrificed a big share of their professional income in order to serve in the field.—Sir JOHN SIMON, the Attorney-General, admitted the force of this contention. The amendment made in the Bill at his instance laid down that officers and men who had served or were serving at home or abroad in the military or naval forces of the Crown in connexion with the present war would not be taxed either for income tax or super tax on the three years' average, but only upon the income actually earned in the present financial year (1914–15). The same concession was made to those who had been engaged in connexion with the war in any work abroad of the British Red Cross Society, the St. John Ambulance Brigade, or kindred organisations. The Attorney-General was asked how this concession would affect medical men serving with the forces. He replied that all such officers serving under military law would receive the concession whether serving at home or abroad.

HOUSE OF COMMONS.

THURSDAY, NOV. 19TH.

Army Medical Officers.

Sir H. RAPHAEL asked the Under Secretary of State for War whether retired army medical officers holding retired pay appointments of medical officer in charge of troops and military hospitals at depôts necessitating in peace time an inconsiderable amount of work, and now, since the commencement of the war, requiring all-day service and constant orderly duty day and night owing to the increase of work and expansion of hospital duty, had been refused kit allowance and the same rate of pay granted to retired medical officers who had been recalled to duty ; and, if so, whether he would consider the justice and advisability of equalising the financial position of these two classes of officers.—Mr. H. BAKER (on behalf of Mr. TENNANT) replied : These officers, in common with other retired officers who were in the employment of the War Department in peace, are being treated in accordance with the regulations under which they accepted their appointments. If there are any grounds for varying the regulations they shall be considered.

Sir H. RAPHAEL : Can the honourable gentleman say why, if this matter has engaged the attention of the War Office, have they failed to acknowledge my letters giving full reasons for the proposed equalisation of scales of payment ?—Mr. BAKER : Those are the regulations under which they were employed.

Sir H. CRAIK : Is it not the case that these men, who have had long experience, are at a salary of £150 working 12, 13, and 14 hours per day ?—Mr. BAKER : I do not know whether it is so. It may be that they are working long hours, but many people are. The regulations under which they are serving are regulations which they have accepted. If there is a good case for altering them it will be considered.

Sir H. CRAIK : Is it not the case that temporary doctors who are acting in their places are receiving as much as £1 4*s*. per day whilst these men are only receiving a salary of £150 ?—Mr. BAKER : If the honourable gentleman would submit grounds on which he thinks the regulations should be altered I promise him they will be considered.

The Health of the New Army.

Mr. MORRELL asked the Under Secretary of State for War whether his attention had been called to the number of cases of pneumonia that had recently occurred in some of the camps in which the new army was being trained ; and whether he would grant a return showing the health of the troops in the various camps.—Mr. TENNANT answered : The returns of admissions to hospitals regularly come before us. My honourable friend is not correct in thinking that the number of cases of pneumonia is abnormal. There has been no rise in the admission ratio in spite of the fact that a large proportion of troops are under conditions of camp life. There is no undue prevalence of infectious disease anywhere, and my noble friend being able to give this assurance, does not think that the suggested return would be in the general interest.

Monday, Nov. 23rd.

Medical Arrangements of the New Army.

Mr. Hinds asked the Under Secretary of State for War what arrangements were being made for providing a medical service for the new armies; and, pending the organisation of such a service, what provision was made for the treatment of troops in the new battalions or brigades.—Mr. Tennant answered: The new army will be provided with medical arrangements on the same basis as the Expeditionary Force. Large training establishments have been formed at which the subordinate personnel is being instructed in their active service duties. Pending the completion of these arrangements the new army is receiving medical attendance on exactly the same lines as the regular army in times of peace. Temporarily commissioned officers in the Royal Army Medical Corps and locally employed civil practitioners have been engaged in sufficient numbers to meet all requirements, and nearly 100 of the Royal Army Medical Corps Reserve of Officers have been recalled to duty. So far there has been no difficulty in securing the services of a sufficient number of fully qualified medical men, and it is not anticipated that there will be any shortage in the immediate future. All the military hospitals in the country have been very greatly expanded, and several large civil and private hospitals are working in conjunction with them. Up to the present there has been no lack of hospital accommodation.

Tuesday, Nov. 24th.

Medical Attendance for Soldiers' Dependents.

Sir H. Craik asked the Secretary to the Board of Education, as Vice-Chairman of the Committee with regard to the provision of free medical attendance and drugs when necessary to the dependents of men serving with the army, whether any arrangements had been arrived at as to the offer of the British Medical Association to provide free medical attendance to such dependents, and what arrangements had been made for the supply of the necessary medicines.—Dr. Addison replied: The Special Committee set up for the purpose have prepared a scheme for utilising the generous offer of the British Medical Association, and have issued instructions to Local Representative Committees in England and Wales, together with a supply of special medical books for issue to suitable dependents of men serving with the army or the navy. The scheme is now in operation throughout England and Wales, except in a few areas where a local scheme had been adopted. The local arrangements vary, but as a rule the books, which are accepted as evidence of *bona fides* by doctors and chemists working under the scheme, are issued by the Local Representative Committee, assisted by the Soldiers' and Sailors' Families Association. The scheme has also been brought into operation in Scotland, where it is being worked by the Soldiers' and Sailors' Families Association, The Pharmaceutical Society of Great Britain generously offered on behalf of their members to supply the necessary medicines and appliances at cost price. The cost price of medicines and appliances supplied under the scheme is being defrayed from a grant made out of the Prince of Wales's Fund. The work of checking and pricing prescriptions is being undertaken at considerable expense by the Pharmaceutical Society under a system approved and inspected by the Committee.

BOOKS, ETC., RECEIVED.

Arnold, Edward, London.
A System of Clinical Medicine dealing with the Diagnosis, Prognosis, and Treatment of Disease, for Students and Practitioners. By Thomas Dixon Savill, M.D. Lond. Fourth edition, thoroughly revised. Price 25*s.* net.

Baillière, Tindall, and Cox, London.
Problems in the Accommodation and Refraction of the Eye: A Brief Review of the Work of Donders. By Ernest Clarke, M.D., B.S., F.R.C.S. Price 2*s.* 6*d.* net.

Bell, G., and Sons, London.
Spiritual Healing. By the Rev. W. F. Cobb, D.D. Price 5*s.* net.

Encyclopædia Britannica Company, 125, High Holborn, London.
Belgium, Italy, and Switzerland. By the Rev. G. Edmundson, Member of the Netherlands Association of Literature; H. Wickham Steed, formerly Correspondent of the *Times* in Rome; and the Rev. W. A. B. Coolidge. Price 2*s.* 6*d.* net.
France. By Paul Wiriath, Director of the École Supérieure, Paris; and J. E. C. Bodley. Price 2*s.* 6*d.* net.
Germany and Her Colonies. By Walter Alison Phillips, Lecky Professor of Modern History, Trinity College, Dublin; James Wycliffe Headlam; and Arthur William Holland, formerly Scholar of St. John's College, Oxford. Price 2*s.* 6*d.* net.
Russia and the Balkan States. By Sir Donald Mackenzie Wallace, Prince Kropotkin, C. Mijatovich, formerly Servian Minister in London, and J. D. Bourchier. Price 2*s.* 6*d.* net.
Wars of the 19th Century. By Maj.-Gen. C. W. Robinson, C.B.; Colonel Maude, C.B.; Lieut.-Col. J. H. Verrinder Crowe; and others. Price 2*s.* 6*d.* net.
Austria-Hungary and Poland. By H. Wickham Steed; W. A. Phillips, Lecky Professor of Modern History, Dublin; and David Hannay. Price 2*s.* 6*d.* net.

Murray, Thomas, London. Knapp, Drewett and Sons, Kingston-on-Thames.
Dr. Finny's First Aid: A Notebook for Ambulance Students. By W. E. St. Lawrence Finny, M.D., M.Ch. Price 6*d.* net.

Saunders (W. B.) Company, London.
Military Hygiene and Sanitation. By Frank R. Keefer, A.M., M.D., Lieut.-Col. Medical Corps, U.S. Army. Fully illustrated. Price 6*s.* 6*d.* net.

Smithsonian Institution, Washington.
Miscellaneous Collections, Vol. LXIII., No. 1. Atmospheric Air in Relation to Tuberculosis. By Guy Hinsdale, A.M., M.D., Secretary of the American Climatological Association. 93 plates.

Thacker, W., and Co., London and India.
Lyon's Medical Jurisprudence for India, with illustrative cases. By L. A. Waddell, C.B., C.I.E., LL.D., M.B. Fifth edition. Price 28*s.*

University Press, Cambridge. C. F. Clay, London.
The Chemical Examination of Water, Sewage, Foods, and other Substances. By J. E. Purvis, M.A., University Lecturer in Chemistry and Physics as applied to Hygiene and Public Health, St. John's and Corpus Christi Colleges, Cambridge; and T. R. Hodgson, M.A., Public Analyst for the County Boroughs of Blackpool and Wallasey. Price 9*s.* net.

Unwin, T. Fisher, London.
Dreams. By Henri Bergson. Translated, with introduction, by Edwin E. Slossan. Price 2*s.* 6*d.* net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Oates, Geoffrey E., M.D., B.S. Lond., M.R.C.P. Lond., D.P.H. Camb., has been appointed Medical Officer of Health, School Medical Officer, and Medical Superintendent of the Isolation Hospital, Urban District of Ilford.

Raw, Stanley, M.D., B.S. Durh., F.R.C.S. Edin., has been appointed Honorary Surgeon to the Sunderland Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Barnsley, Beckett Hospital and Dispensary.—Second House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and laundry.

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

Beckenham, Urban District of.—Temporary Medical Officer of Health and School Medical Officer. Salary at rate of £425 per annum.

Birkenhead and Wirral Children's Hospital, Woodchurch-road.—House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

Birkenhead Borough Hospital.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birkenhead Union Infirmary.—Female Resident Assistant Medical Officer. Salary at rate of £150 per annum, with board, washing, and apartments.

Birmingham and Midland Eye Hospital, Church-street.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

Birmingham, Yardley-road Sanatorium and Anti-Tuberculosis Centre.—First Assistant Medical Officer. Salary £250 per annum, with board and residence.

Blackburn Union Workhouse and Cottage Homes.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, rations, washing, and attendance.

Bradford Poor-law Union, St. Luke's Hospital and Union House.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with rations, apartments, and washing.

Bradford Royal Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

Bridgwater Hospital.—House Surgeon, unmarried. Salary at rate of £125 per annum, with board, lodging, and washing.

Brighton Isolation Hospital.—Junior Resident Medical Officer. Salary £100 per annum, with board and lodging.

Brighton, Royal Sussex County Hospital.—Assistant House Surgeon, unmarried. Salary £80 per annum, with apartments, board, and laundry.

Bristol General Hospital.—Resident Obstetric Officer for six months. Salary at rate of £120 per annum, with board, residence, &c.

Cardiff, King Edward VII.'s Hospital.—House Surgeons for six months. Salary at rate of £100 per annum, with board, residence, and laundry. Also Resident Surgical Officer. Salary £160 per annum, with board, laundry, and apartments.

Cardiff, King Edward VII. Welsh National Memorial Association.—Assistant Tuberculosis Physicians. Salary £350 per annum.

Carlisle, Cumberland and Westmorland Asylum, Garlands.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.

Chingford, Hospital for Infectious Disease.—Resident Medical Officer. Salary £200 per annum, with rooms and board.

CITY OF WESTMINSTER UNION INFIRMARY, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL. Coventry.—Junior House Surgeon. Salary £100 per annum, with rooms, board, washing, and attendance.

DERBY MENTAL HOSPITAL.—Senior Assistant Medical Officer. Salary £250 per annum, with board, apartments, and washing.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £120 per annum, with board, residence, attendance, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £65 per annum, with board and washing.

DUNFERMLINE, CARNEGIE DUNFERMLINE TRUST.—Female Assistant School Medical Officer.

ESSEX EDUCATION COMMITTEE.—Medical Inspector. Salary £300 per annum.

FAREHAM, HANTS COUNTY ASYLUM.—Locum Tenens. Salary 5 guineas a week, with apartments, board, washing, and attendance.

FIFE DISTRICT ASYLUM.—Assistant Medical Officer. Salary £140 per annum, with rooms, board, and attendance.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £200 per annum, with board, lodging, and washing.

HALIFAX UNION POOR-LAW HOSPITAL, Salterhebble. — Resident Medical Officer. Salary £140 per annum, with apartments, rations, and washing.

HAMPSHIRE COUNTY COUNCIL.—Tuberculosis Officer. Salary £500 per annum.

IPSWICH, EAST SUFFOLK AND IPSWICH HOSPITAL.—Resident House Physician. Salary at rate of £100 per annum, with board, apartments, &c.

KEIGHLEY, BOROUGH OF.—Assistant School Medical Officer and Assistant Medical Officer of Health. Salary £300 per annum.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Dental Surgeon.

LEEDS GENERAL INFIRMARY.—Resident Casualty Officer. Salary £125 per annum, with board, residence, and laundry.

LEICESTER ROYAL INFIRMARY.—Two Resident Assistant House Surgeons. Salary £80 per annum.

MACCLESFIELD GENERAL INFIRMARY.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

MAIDSTONE, KENT COUNTY ASYLUM.—Female Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, quarters, attendance, washing, &c.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

MANCHESTER INSTITUTION AT CRUMPSALL.—Second Resident Assistant Medical Officer, unmarried. Salary £180 per annum, with rations, apartments, fire, light, washing, and attendance.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Fitzroy-square, W.—House Surgeon. Salary £150 per annum.

MERSTHAM, NETHERNE ASYLUM.—Medical Superintendent. Salary £800 per annum, with house and garden.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Senior House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Senior and Junior House Physicians. Salary £50 per annum each, with board and residence.

NEWCASTLE-UPON-TYNE CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary £200 per annum, with board, lodging, &c.

NEWPORT (MON.), ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

NOTTINGHAM GENERAL HOSPITAL.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

PLYMOUTH COUNTY BOROUGH INSURANCE COMMITTEE (NATIONAL INSURANCE ACT, 1911).—Two Medical Practitioners.

PRESTON ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Female Assistants to Pathologist. 1. Full-time appointment, salary £150 per annum. 2. One half-time appointment, salary £50 per annum. Also Acting Assistant Physician.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £75 per annum, with board, lodging, and washing.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Senior and Junior Resident Medical Officers. Salaries at rate of £90 and £70 per annum respectively, with board and washing.

ST. MARYLEBONE INFIRMARY, Rackham-street, Notting Hill, W.—Temporary First Resident Assistant Medical Officer, unmarried. Salary £225 per annum, with apartments, rations, and washing. Also Third Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £180 per annum, with apartments, rations, and washing.

ST. PANCRAS NORTH INFIRMARY, Dartmouth Park Hill, Highgate, N.—Junior Assistant Medical Superintendent. Salary at rate of £140 per annum, with apartments, board, and washing.

ST. PANCRAS SOUTH INFIRMARY, Pancras-road, N.W.—Senior Assistant Medical Superintendent and Senior Assistant Medical Officer of House adjacent. Salary at rate of £225 per annum, with board, apartments, and washing. Also Female Junior Assistant Medical Officer. Salary at rate of £150 per annum, with apartments, board, and washing.

SALFORD ROYAL HOSPITAL.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

SALFORD UNION INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD, EAST-END BRANCH OF THE CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board and residence.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing

SHEFFIELD ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with board and residence.

SHEFFIELD, SOUTH YORKSHIRE ASYLUM, Wadsley.—Fourth Assistant Medical Officer. Salary £250 per annum, with apartments, board, and attendance.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

STOKE-ON-TRENT, INFECTIOUS DISEASES HOSPITAL, Bucknall.—Female Resident Assistant Medical Officer. Salary £150 per annum, with apartments, board, washing, and attendance.

SWANSEA UNION INSTITUTION.—Resident Assistant Medical Officer. Salary £295 per annum.

TAUNTON, TAUNTON AND SOMERSET HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, lodging, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, &c.

WAKEFIELD, CARDIGAN SANATORIUM.—Assistant Medical Officer. Salary £250 per annum.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £250 per annum, with apartments, board, washing, and attendance. Also Locum Tenens Assistant Medical Officer. Salary as arranged, with apartments, board, and travelling expenses.

WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary at rate of £200 per annum, with board, apartments, and laundry.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing. Also Locum Tenens Medical Officer, unmarried. Salary 6 guineas per week, with apartments, board, attendance, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer and House Surgeon for six months. Salary at rate of £125 per annum each, with board, rooms, and laundry.

WORCESTER COUNTY AND CITY ASYLUM, Powick, near Worcester.—Junior Assistant Medical Officer. Salary £225 per annum, with board, lodging, and washing.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

WORKSOP VICTORIA HOSPITAL AND DISPENSARY.—Medical Officer and House Surgeon. Salary £150 per annum, with rooms, coal, light, and attendance.

YORK COUNTY HOSPITAL.—House Physician for six months. Salary at rate of £150 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTHS.

CARLYLE.—On Nov. 22nd, at Menlove-avenue, Liverpool, the wife of Oliver Carlyle, F.R.C.S., of a daughter.

FITZWILLIAMS.—On Nov. 21st, at Grosvenor-street, W., the wife of D. C. L. Fitzwilliams, F.R.C.S., Captain R.A.M.C.T., of a son.

FRASER.—On Nov. 15th, at Belsize-avenue, Hampstead, the wife of Dr. D. Hammand Fraser, of a son (Roderick Andrew).

THOMAS.—On Nov. 21st, at Colston-parade, Redcliffe, Bristol, the wife of J. M. M. Thomas, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

DALE—BRODIE.—On Oct. 26th, at Hong-Kong, W. Chalmers Dale, M.B., B.S. Lond., of the English Presbyterian Mission, Shanghang, to Eliza Mabel (Elsie), eldest daughter of Mr. and Mrs. Robert Brodie, New Barnet.

RECKITT—NEWMAN.—On Nov. 5th, 1914, at St. Andrew's Church, West Kensington, by the Rev. E. D. Castledon, Edward B. Reckitt, M.D., of Little Hadham, Herts, to Evelyn, second daughter of the late Henry Newman, of The Plantation, Wolverton, Basingstoke.

SCOTT—HICKS.—On Nov. 23rd, at Copford Parish Church, Lieutenant E. Scott, R.A.M.C., of St. George's Hospital, to Agnes E. Hicks, daughter of Mr. H. T. Hicks and Mrs. Hicks, of Walton House, Copford, Essex.

SMYTHE—CLOUTMAN.—On Nov. 14th, at St. Mary Redcliffe, Bristol, Henry James Drew Smythe, M.B., Lieutenant R.A.M.C., to Enid Audrey, youngest daughter of Mr. and Mrs. Curtis Cloutman, Bristol.

DEATHS.

CAZENOVE.—On Nov. 18th, William Reginald Cazenove, M.R.C.S., L.R.C.P., of West Norwood Lodge, Knight's Hill, London, aged 40 years.

SMITH.—On Nov. 14th, Eustace Smith, M.D., F.R.C.P. Lond., in his 80th year.

STOCKWELL.—On Nov. 20th, at Bruton, Somerset, Frederick Stockwell, M.D. Lond., aged 76 years.

YEO.—On Nov. 20th, suddenly, .I Burney Yeo, M.D., F.R.C.P. Lond.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

THE ATTRACTIONS OF DAVOS.

IN his annual report, just received at the Foreign Office, Dr. Bernard Hudson, the British Consul at Davos, writes that in the year 1913 there were 10,936 invalids resident, besides 12,595 tourists and 8101 long-stay visitors—total 31,632, as compared with 31,055 in 1912. Of these, in 1912 2099 were British, while in 1913 the number of British was 2236, thus showing an increase of 137. This (observes Dr. Hudson) is eminently satisfactory, and all the more so in view of the fact that for some years past the numbers of British visitors have been steadily declining; in 1910 they numbered 2513, in 1911 2267, and in 1912 only 2099, this latter being the smallest British total since records have been officially kept. This decrease in the number of British visitors may be put down partly to the desire to favour home resorts, of which many have sprung up of late years, and also partly, no doubt, to the erroneous impression prevailing at home that owing to the number of invalids Davos is not a safe place to go to. It only requires a visit to dispel these ideas. However, the fact that the numbers of British have increased in 1913, and also again this year up to March 31st, serves to show that the merits of the dry, sunny, windless Alpine climate are once again beginning to make their claim felt, especially as regards the treatment of pulmonary tuberculosis.

Davos has developed to an extraordinary degree as a ski-ing centre of late years, and now an increasing number of British people go for this particular sport. There are large numbers of both long and short tours to choose from. Davos may be called the home of British skating, and it is here that this particular branch of the art is seen to the best advantage. The club is in a very flourishing condition. Bobbing and tobogganing always form a prominent part of the winter sports, and the two excellent runs—i.e., Klosters and the Schatzalp—are always much in demand. There is also a good rink for curling, capable of accommodating four games simultaneously.

The Queen Alexandra Sanatorium has had a highly successful year, and many invalids, who otherwise would not have been able to go to Davos, have felt the benefit of this excellent institution. The new wing of 18 beds was opened last year, while this year a fine suite of up-to-date medical rooms has been added, and also a new X ray room. The project for making a kur-park for the use of summer visitors has been passed and the work begun. This will be a great boon to the place and will, it is hoped, attract visitors during the summer.

A SOLDIER'S FRENCH BOOK.

THE *Soldiers' English and French Conversation Book*, compiled by Walter M. Gallichan (London: T. Werner Laurie. Pp. 142. Price 7*d.* net), should prove of considerable service to those for whom it is intended. It differs from all other conversation books in the important particular that all its vocabulary and all its phrases deal with only military subjects or with a selection of everyday subjects concerning which Tommy Atkins is particularly likely to wish to communicate his ideas to French people, military or otherwise. The little book deals with landing, marching, train, camping, transport, action, convoy, aviation, trenches, wounds, &c., and includes ordinary conversation dealing with food, smoking, money, weights and measures, &c. There are also considerable vocabularies of strictly military terms and of everyday words. A phonetic pronunciation is given which, on the whole, is fairly good. The correspondence between symbols and pronunciation is, however, so arbitrary that without a distinct prior agreement, acquired by ear and eye together, as to what symbols shall stand for in the way of sound, there is little reasonable ground to hope that two people would interpret the transliteration alike. On the whole, however, a Frenchman would be able to recognise what was meant in French by an English person making the effort to pronounce the phonetic forms as though they were English words.

TO CYCLIST MEDICAL OFFICERS.

To the Editor of THE LANCET.

SIR,—Would one of your readers tell me what are the duties of the medical officer to a cyclist battalion, who is not a member of the Royal Army Medical Corps?

I am, Sir, yours faithfully,
SEPTOCYCLE.
Nov. 24th, 1914.

A MISSING OFFICER.

WE are asked to state that if any member of the Royal Army Medical Corps has heard or knows anything of the whereabouts of Second Lieutenant Mark R. Pease, 1st Battalion East Yorkshire Regiment, who has been missing since Oct. 20th, it would be a great kindness if he would communicate with his father, Colonel Pease, Beverley, East Yorks. Mr. Pease, at the time he was reported missing, was engaged in hand-to-hand fighting near Prémesques, half way between Lille and Armentières.

A CORRECTION.

To the Editor of THE LANCET.

SIR,—In a notice sent you recently of the Alvarenga prize of the College of Physicians of Philadelphia there was an error in the title of Dr. Sheffield's paper; it should read as follows: "Idiocy and Allied Mental Deficiencies in Infancy and Early Childhood." I shall be greatly obliged if you will make this correction.—I am, Sir, yours faithfully,

FRANCIS R. PACKARD, M.D.,
Secretary, College of Physicians of Philadelphia.
Philadelphia, Nov. 7th, 1914.

AMBIGUITY.

WE observed the following paragraph in an evening newspaper this week:—

> "The intolerable nuisance of mud-splashing by motor-cars" is to be discussed by the Westminster City Council with a view to the use of a contrivance to prevent it being made compulsory.

It must be a curious contrivance.

A GOLD medal is to be presented by Mr. Henry S. Wellcome to Dr. Frederick B. Power to commemorate his directorship of the Wellcome Chemical Research Laboratories for 18½ years. In addition Mr. Wellcome is causing a life-size portrait of Dr. Power to be painted.

R. L. G.—The official "Manual of Elementary Military Hygiene," price 6*d.*, can be obtained in London from Wyman and Sons, or abroad through agencies of T. Fisher Unwin.

Diwan Chand.—The publisher is Mr. William Heinemann, Bedford-street, London, W.C. The book could probably be obtained through Messrs. Butterworth and Co., of Calcutta.

K.—We know of no suitable work.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—M. de Lange: On the Thermophone—a New Form of Telephone.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY.

OCCASIONAL LECTURE in the Robert Barnes Hall: at 5 P.M.

Dr. D. Barty King: Some Recent Experiences of Germany in War Time (during Detention in Germany) and their Lessons (illustrated by lantern slides).

Visitors invited.

SECTION OF PATHOLOGY (Hon. Secretaries—Gordon W. Goodhart, C. Price-Jones): at 8.30 P.M.

At the Pathological Department, St. Bartholomew's Hospital, E.C.

Dr. Lazarus-Barlow: The Effect of Radium on Different Types of Cells.

Mr. S. G. Shattock and Dr. L. S. Dudgeon: Cytocides.

Mr. R. Mackenzie Wallis: The Polarimetric Method for Estimating Protective Ferments in the Blood.

WEDNESDAY.

SECTION OF OPHTHALMOLOGY (Hon. Secretaries—Leslie Paton, Elmore W. Brewerton): at 8 P.M.

Discussion:

Will be opened by Mr. Harold B. Grimsdale on the Necessity for an Exact Definition of Blindness.

Clinical Cases will be shown.

Those who wish to take part are requested to send in their names to one of the Honorary Secretaries of the Section.

THURSDAY.

SECTION OF OBSTETRICS AND GYNÆCOLOGY (Hon. Secretaries—C. Hubert Roberts, Cuthbert Lockyer): at 8 P.M.

Specimens:

Dr. Clifford White: (1) Tuberculosis of an Ovarian Cyst; (2) Interstitial Tuberculous Salpingitis.

Dr. H. Macnaughton-Jones: Myomatous Uterus with Large Numbers of Intra-uterine and Intra-mural Growths.

Dr. Trevor B. Davies: (1) Sarcoma of the Cervix; (2) Sarcoma of the Broad Ligament.

Dr. C. Hubert Roberts: Pyometra and Cancer.

Dr. Cuthbert Lockyer: Case of Double Ureter Simulating a Pariovarian Cyst in the Right Broad Ligament.

Short Communications:

Dr. Thomas G. Stevens: Two Cases of Hysterectomy for Placenta Prævia, with specimens.

Dr. C. Hubert Roberts and Dr. Edward Smeed: Case of Placenta Prævia with Unusual Sequelæ.

Dr. Herbert Spencer: Case of Extensive Cancer of the Cervix with Pyosalpinx well Seven Years after Wertheim's Hysterectomy.

FRIDAY.

SECTION OF LARYNGOLOGY (Hon. Secretaries—Cecil I. Graham, W. D. Harmer): at 4 P.M.

Cases and Specimens:

Will be shown by Dr. William Hill, Sir William Milligan, Dr. Elphick, Mr. C. W. Hope, Mr. Stuart-Low, Mr. Graham, and others.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

WEDNESDAY.—8 P.M., Dr. W. R. Ormandy: Britain and Germany in Relation to the Chemical Trades.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Meeting.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, Society's Rooms, West London Hospital, Hammersmith-road, W.

FRIDAY.—8.30 P.M., Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. J. B. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Nose, Throat, and Ear (Mr. H. D. Gillies). X Rays and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J Whiting). Special Demonstration of Cases illustrating the Diagnosis and Treatment of Disease by the X Rays (Dr. J. Metcalfe).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham): Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:- Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Aphasia.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Acute Myelitis.

CENTRAL LONDON THROAT. NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY.—3 P.M., Lecture:—Mr. Stuart-Low: The Ear.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

CHADWICK PUBLIC LECTURES, London School of Economics, Clare-market, Kingsway, W.C.

FRIDAY.—8.15 P.M., Sir Ronald Ross, K.C.B.: Government and Military Sanitation in the Tropics (illustrated with lantern slides).

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

THURSDAY.—ANCOATS HOSPITAL, Mill-street.—4.30 P.M., Dr. C. E. Lea: Physical Signs in Heart Disease.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

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THE LANCET Office, Nov. 25th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 19	30 366	S.W.	0·20	43	43	34	34	34	Foggy
,, 20	30·304	S.E.	...	65	41	34	36	38	Overcast
,, 21	30·118	N.E.	...	47	40	34	35	36	Cloudy
,, 22	29 840	N.E.	...	55	41	36	37	39	Cloudy
,, 23	29 790	N.E.	...	43	41	36	36	38	Overcast
,, 24	29 900	NNW	0·12	57	45	36	35	36	Overcast
,, 25	29 812	N.W.	...	62	48	36	40	41	Fine

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The Croonian Lectures

ON

MODERN ASPECTS OF CERTAIN PROBLEMS IN THE PATHOLOGY OF MENTAL DISORDERS.

Delivered before the Royal College of Physicians of London,

BY EDWIN GOODALL, M.D. LOND., B.S., F.R.C.P. LOND.,
MEDICAL SUPERINTENDENT, CITY OF CARDIFF MENTAL HOSPITAL.

LECTURE I.

SIR THOMAS BARLOW AND GENTLEMEN,—When I was honoured with an invitation to deliver these lectures before the College I deemed it a duty to make it clear that it would not, in my judgment, be possible for any one whose work lay in the domain of psychiatry to bring before you at the present time an array of substantial results, based upon scientific research, such as would for a moment compare with the results available for a general pathologist, a bacteriologist, or a worker in the general domain of pathological chemistry. This disability is doubtless recognised by those whom I have the honour to address; briefly, it depends, firstly, upon the inherent difficulties of the problems of the pathology of mental disorders, and, secondly, upon the deplorable separation of psychiatry from the other branches of medicine, in this country more especially—a separation which I am glad to believe is nearing its termination. In view of the comparative paucity of facts available for the purposes of my theme it is necessary in these lectures that my range should be somewhat wide, and I shall have, broadly speaking, to deal with the results of pathological and bacteriological research, with problems of metabolism, with chemical and serological observations, and with certain therapeutic measures based upon observations in clinical pathology.

MORBID HISTOLOGY IN MENTAL DISEASE.

My impression from a survey of my experience of 24 years is that the attention of workers in the field of the pathology of insanity was in the main devoted to the morbid anatomy and histology of the brain until about 15 years ago, when the output of work in this domain showed signs of diminishing, and attention was diverted to the problem of pathological causation. Already 20 years ago dissatisfaction with the results of histological research was expressed, and the advent of the worker in the field of biochemistry was desired. The histological work of those who had gone before was recognised, it need not be said, as indispensable; whilst we were not so foolish as to believe that it was complete, it was nevertheless felt that, even in comparison with other diseases, the knowledge we possessed of the morbid histology of the brain in mental disease was not mean, and that the time had arrived when following the rational course, we should search for the pathological factors which had expressed themselves in the modes with which we were familiar. There remained, and there still remains, the problem as to the degree of responsibility of the histological lesions for some of the symptoms, perhaps characteristic symptoms, of this or that kind of insanity, by virtue of specific localisation of lesions in specific kinds of insanity.

At the present time we have to record that there are in most cases of mental disease uncharacteristic brain changes, but, largely owing to the powerful impetus given to histological research by the work of Alzheimer and Nissl and their pupils, characteristic brain changes have been shown in mental disease associated with syphilis, in the progressive dementia which accompanies some cases of arteriosclerosis and in senile dementia. On the other hand, the histological lesions found in the following clinical kinds of insanity are not characteristic: the kinds grouped under the term "dementia præcox," the alcoholic insanities, so-called manic-depressive insanity, acute delirious mania, insanity with epilepsy, though it be granted that in the last-mentioned instance a diffuse cerebral gliosis is found in cases dying from intercurrent disease after years of the malady. There is no evidence of characteristic localisation of the lesions found in the brain in the psychoses, either as regards the brain as a whole or as regards layers of the cortex cerebri, or constituents of the cortex, unless the involvement of the mesodermal elements in the psychoses primarily due to syphilis or associated with trypanosomiasis are so considered.

THE DEMENTIA PRÆCOX GROUP OF CASES.

I am not, I think, justified in detaining you with observations upon morbid histology in mental diseases further than is necessitated by a reference to the particular cases of, respectively, the dementia-præcox group and dementia paralytica. In studying the pathological anatomy of the cases nowadays grouped under the name "dementia præcox" we are faced with the difficulty that death seldom occurs in an early stage of the disease, and when it does it is due to intercurrent maladies, especially tuberculosis, which may themselves be partially responsible for the morbid appearances. The disease is not due to lethal causes; incidentally, the same is true of other psychoses, such as the systematised delusional disorders, and even manic-depressive insanity, as a rule. Zingerle[1] rightly points out that one must further discount appearances which may well be referable to mere congenital defect of development. There being no characteristic anatomical picture for the disorder as a whole, its subdivision, clinically, into three groups obtains of course no support from the standpoint of pathological anatomy. Some of the best descriptions of individual cases (Zingerle, Klippel and Lhermitte,[2] Goldstein,[3] Fioli[4]) are concerned with the katatonic variety of the disease. The points to be noted for verification from the observations made up to the present are: that, at any rate for the variety mentioned the lesions—of the individual elements—which are in no way peculiar, but are those found in many acute and recent mental disorders (degenerative conditions, as shown by modern methods in nerve- and glia- cells), are found throughout the brain, the cerebellum, and the basal ganglia; that they are especially pronounced in the deeper layers of the cortex cerebri; that they concern the ectodermal elements (degeneration) especially and the mesodermal to a much less extent (absence of inflammation). Should these observations be confirmed they would afford a means of distinguishing anatomically between this clinical variety of dementia præcox and such diseases as dementia paralytica, insanity due to lues cerebri, to arterio-sclerosis, and to chronic alcoholism, in which vascular and perivascular changes are marked. If confirmed, they would point to the conclusion that maladies which are associated with lesions so diverse must be unlike in pathogenesis.

DEMENTIA PARALYTICA.

In regard to the morbid anatomy of dementia paralytica, it is admitted that whilst none of the macroscopic or microscopic lesions is pathognomonic, these together form a whole which is characteristic. To the naked eye, the combination of the indications of long-standing lepto-meningitis, especially pronounced over the fronto-parietal area, of cortical erosions, of wasting of the prefrontal gyri and granularity of the ependyma of the ventricles, is characteristic. Histologically the diffuse nature of the infiltration, by products of inflammation, of the vessel-walls, traceable throughout the vessels, including the finest, the tendency of the infiltration to keep to the vessel-walls and perivascular area, the superabundance of plasma cells: these are characteristic. Some might further claim that the multiplicity, the gravity, and the widespread distribution of all the lesions throughout the nervous system are characteristic. As to the controversy formerly waged, and as late as ten years ago, as to whether the primary lesion in dementia paralytica were vascular or parenchymatous, meaning by the latter a primary degeneration of the neurones, one hears nothing now. The dogma respecting primary degeneration was harmful, like other dogmata; in this instance it diverted attention from inquiry into a toxi-infective causation. Spielmeyer,[5] in 1910, described the histological changes in an early case of the disease, dead of an intercurrent malady, in which there were inflammatory changes in some parts of the cortex and degeneration of the nerve tissue in other parts. He further refers to a case reported by Alzheimer, one of long standing, in which extensive nerve tissue degeneration existed with very little vascular change. Vascular changes and parenchymatous degeneration are independent of each other to some extent. The question of their relationship appears insignificant, overshadowed by the problem of their common pathogenesis. The proclivity of the frontal lobes to the disease remains unexplained, except on the views of Dr. Ford Robertson, according to which they are exposed to early infection by the diphtheroid organisms described by him, since these are traceable to the brain *viâ* the nasal mucosa, and the frontal lobes are in contiguity with the cribriform plate of the ethmoid.

Lesions in Dementia Paralytica and Cerebral Lues.

One has selected the frontal gyri almost as matter of course as the most likely ones in which to find the spirochæta pallida, and recent writers appear to find the organism with less difficulty in them than elsewhere. Having regard to the fact that the morbid histology of the brain in dementia paralytica, and in diffuse cerebral lues, I think I may also say, was—if we except plasma cells and rod cells—well known to pathologists in 1892 (I select that date with confidence in respect to dementia paralytica, at any rate, as at that time those of us who were taught by Bevan Lewis at the West Riding Asylum knew almost as much concerning the morbid histology as we do now), it is somewhat surprising to me that I cannot remember that anyone then pointed out the difficulty of differentiating between these two conditions by histological examination. The failure to recognise, or at any rate to lay stress upon, the resemblance between these two histological pictures I ascribe to the absence of coördination between workers in psychiatry and neurology, and to the fact that the importance of syphilis in the pathogenesis of dementia paralytica was not then recognised. It was not, I think, until by patient clinical observation, and inquiry into the histories of cases, evidence of syphilis was found in a large proportion that such evidence was sought for by the methods of morbid histology; and no doubt interest in this inquiry was further promoted by the results obtained by the application of the method of complement-deviation to the serum and cerebro-spinal fluid of general paralytics.

Giljarowsky,[6] in 1911, thought the conclusion justified that diffuse syphilitic changes in the brain and meninges are difficult or impossible to distinguish from the changes commonly associated with dementia paralytica; only local conditions, such as gummata in different stages, can with certainty be distinguished. He describes an interesting case in which clinically there were first symptoms of cerebral syphilis and later of dementia paralytica; at the necropsy were found histological changes ascribable to syphilis and others usually regarded as characteristic of dementia paralytica; the former, however, appeared to be of longer duration. The author considers this to be a case of combined syphilis and general paralysis. At the present day some would no doubt be disposed to regard the morbid condition as due in its entirety to syphilis. Cerletti[7] (1913) describes infiltration of the adventitia of the cerebral vessels, and of the pial vessels, by lymphocytes and plasma cells, and proliferation of the glial elements, in meningo-encephalitis of syphilitic origin, indistinguishable from the lesions found in dementia paralytica. He observes that the treponema pallidum is very rare in cerebral syphilis in the adult; some of us know the difficulty of finding it in the other condition. Landsbergen[8] (1912) maintains that there occur often in one microscopic field the characteristic changes of tertiary lues and those of so-called metasyphilis. Sträussler[9] (1911 and 1912) described six cases in which syphilitic lesions—such as meningitis and miliary gummata—coexisted with changes typical of dementia paralytica. Marinesco and Minea[10] (1913) also point out the resemblance between the histological pictures in the cases in question. I cite the above work as indicating how, in recent times, and in the light of better knowledge of the pathology of dementia paralytica, a close relationship has been found between the lesions of diffuse cerebral lues and of so-called metasyphilitic disease of the brain. The importance of the plasma cells in the latter has been exaggerated. I have already alluded to the extraordinary abundance of these elements in the brain of the general paralytic, and this appears to be a characteristic of dementia paralytica; I believe also of sleeping sickness. But they are not peculiar to any special disease; they have been described in cerebral lues, in non-specific encephalitis, and in non-specific foci of inflammation in the central nervous system.[11 12] They appear to constitute a mode of reaction to different toxic agents.

Relations of Dementia Paralytica and Cerebral Syphilis.

The demonstration of the existence in certain cases of diffuse cerebral lues and dementia paralytica of the same cerebral lesions, and the demonstration of mixed histological lesions, illustrating both conditions, in the same brain, leads to the suggestion that dementia paralytica is merely an unusually late manifestation of syphilis of the brain. The number of syphilitics who develop tertiary lesions in the brain is rare; according to Henschen,[13] of 754 only 17·85 per cent. do so. The number developing dementia paralytica is still rarer; statistics, to which I presently refer, place the incidence at 4–5 per cent. As to development of dementia paralytica in cases of cerebro-spinal lues, Mattauschek and Pilcz[14] found that of 116 cases of the latter condition only 2 got the former. This observation is particularly interesting. It is in keeping with the clinical, anatomical, and histological evidence furnished by typical cases of dementia paralytica, which demarcates the condition from cerebral lues. To this has to be added the evidence furnished by the studies in the metabolism of nervous and mental disorders which have been made in quite recent times, which, although doubtless in need of confirmation and amplification, go to show that in dementia paralytica there are well-marked disturbances which are not found in lues cerebri, so that some additional factor would appear to be operative in the former case. Nevertheless, atypical cases of dementia paralytica are not few, and in these it does not seem possible, whether by clinical, serological, anatomical, or histological means, to differentiate the condition from diffuse cerebral lues.

Neuropathic Inheritance in General Paralysis.

Those of us who have reached a certain age can recall that as students we were taught that this disease occurred in persons in whom as a rule no neuropathic inheritance could be found. Not only had their own lives been usually exemplary, with the possible exception of lapses in a remote youth, but they came from a sound stock. Naecke,[15] however, in numerous publications based upon most painstaking and prolonged investigations, has shown that hereditary predisposition to nervous disease is very considerable in dementia paralytica, scarcely less so than in other kinds of insanity, and that such certainly exists in 50 per cent. of cases. Schroeder[16] finds neuropathic inheritance, and evidence of neuropathic disposition in the patient himself, in 77·8 per cent. of cases. He quotes Fornaca, Koller, Soukhanoff, and Gannouchkine as giving figures from 70 per cent. to 75 per cent., and several writers give over 50 per cent. The observation of Schroeder, as to evidence furnished by the patient himself, points to the importance of seeking for evidence of defective development, as furnished by a study of the so-called "stigmata of degeneration," in the adult insane. In a paper published in 1899[17] I dwelt upon this subject, and submitted the scheme of examination I had been following; but in carrying out such inquiry we are met with the difficulty of obtaining control observations upon normal individuals of the same age-periods, social class, and district as the patients. Such controls would require to be carried out with the dead as well as the living subject, for there are of course anomalies of formation of internal as well as of external organs (internal and external stigmata). The above are no light hindrances. Observers are exceedingly few who have grappled with this difficulty; pre-eminent amongst them is Naecke. He asserts that external and internal stigmata are more frequent, grave, and widespread in general paralytics than in normal persons; he finds that in the former, in so far as the brain is concerned, microgyria, undersized frontal convolutions (especially), and the rarer variations or anomalies of the gyri and sulci, which especially indicate arrest of development, appear much oftener than in normal persons. The general paralytic's brain he regards as deficient *ab ovo*. Naecke quotes Vogt, who refers to observations by Roudonie, of Florence, from which it appears that there is in the juvenile general paralytics examined by him a cerebral cortex which in various details is immature (embryonal layer-formation, imperfect cells, anomalies of the medullated substance, &c.). Neuropsychopathic inheritance in dementia paralytica is regarded by Junius and Arndt[18] as the next most important factor to syphilis. They, too, place its incidence at 50 per cent. at least. In order to gauge correctly the importance of this factor we should know the incidence of neuropathic inheritance in cases of acquired syphilis in persons of the same age-periods, class, conditions of life, &c., who have not become general paralytics. Mattauschek and Pilcz,[19] in their interesting contribution to the percentage-incidence of dementia paralytica in 4134 cases of syphilis amongst army officers, found that only 4·7 per cent. developed the former condition, a result which bears out by actual inquiry the general belief as to the rarity of dementia paralytica amongst syphilitics. The question of neuropathic inheritance was not the subject of inquiry; it is, however, surely very improbable that marked neuropathic inheritance was lacking in the 95·3 per cent. of these syphilitics who did not develop general paralysis. Further figures bearing upon the question of the incidence of dementia paralytica in syphilitics are given by O. Fischer[20] (1913); thus, figures from Mattlies, 1–2 per cent. of syphilitics; from Pick and Bandler, 7 per cent., or 1·3 per cent. of 2066 cases, the former if men alone are considered, and tabes is in these figures included with general paralysis.

Comparison of Sleeping Sickness and General Paralysis.

The fact that syphilis preceded general paralysis having been established, it was highly suggestive when attention was drawn to the fact that sleeping sickness—a condition having a remarkable clinical and pathological likeness to general paralysis—followed upon trypanosomiasis, a disease with points of resemblance to syphilis, as is well brought out by Browning and McKenzie.[21] According to Schaudinn the spirochæta pallida stands near the trypanosome in the protozoal group. It is to be noted that trypanosomiasis does not lead to sleeping sickness in all cases by any means; I do not know in what proportion the sequence occurs, but the point is of interest by analogy with the parallel circumstance in regard to syphilis and dementia paralytica. Spielmeyer[22] states that only a very small percentage of experimental animals infected with T. gambiense shows a condition comparable to sleeping sickness. The curability of trypanosome fever and of syphilis contrasts with the incurability, at present, of sleeping sickness (the dementia of trypanosomiasis) and dementia paralytica. A brief reference to the clinical and histopathological resemblances between the last-mentioned states may be permitted. These are well brought out by Vix[23] and by Spielmeyer and Martin.[24] The former, examining patients in the sleeping sickness camps of German East Africa, found that 55 out of 70 presented marked mental symptoms, amongst which he mentions epileptiform seizures, closely resembling those of general paralysis, exalted delusions, with, later, apathy and progressive dementia; on the physical side he observed paresis, tremors (including tongue-tremors), articulatory disturbance, ataxia, contractures, wasting, exaggerated knee-jerks, and Romberg's sign. Most interesting of all, stationary states and remissions occurred in some of these cases. A distinction from general paralysis is that the pupillary reaction is usually intact. In respect to morbid anatomy, the following were among the conditions which resemble those of dementia paralytica: œdema and cloudiness of the pia, pachymeningitis hæmorrhagica, adhesions of the pia to the cortex, granularity of the ventricular ependyma, vascularity, with new vessel formation, perivascular infiltration with lymphocytes and plasma cells, rod cells, morbid changes in the nerve cells and neuroglia. Dogs infected with trypanosomes by Spielmeyer showed lymphocytosis of the cerebro-spinal fluid and increase of protein.

In marked contradistinction to the infrequency with which the treponema is still found in dementia paralytica is the frequency with which the trypanosome was found by Vix in sleeping sickness (65 out of 70 cases, in the blood or cerebro-spinal fluid). Another distinction is that the proclivity of the frontal lobes to suffer in the former disease is not noticeable in the latter. The trypanosomiasis recently described as frequent in Brazil, otherwise known as Chagas' disease, and due to the T. Cruzi (which is found in all regions of the brain in cases which run a chronic course and become demented) appears likewise to result sometimes in a condition resembling dementia paralytica.

Evidence of Toxic Process in Dementia Paralytica.

Cases of pellagra are on record[25] in which the psychical symptoms and neurological signs (reflexes, pupillary condition, speech) have resembled those of dementia paralytica, but the morbid anatomy of the brain was not inquired into. But before the evidence of antecedent syphilis was available, and long before the points of resemblance between sleeping sickness and dementia paralytica were known of, one should rather say long before the former disease began to be studied, the clinical and pathological evidence of the toxic nature of the morbid process in dementia paralytica was recognised as strong. From the clinical standpoint there are the exacerbations and remissions, very suggestive of recrudescence and quiescence of a toxic process; the variations of temperature, of unknown causation, and only found when the temperature is taken several times daily over long periods; and the seizures. The latter are comparable to those observed in uræmia and eclampsia. There is the polynucleosis of the blood in connexion with exacerbations, and some would add that of the cerebro-spinal fluid, with which points I shall have occasion to deal in another lecture. As regards morbid histology, the well-known changes in the walls of the cerebro-spinal vessels, in the perivascular and interstitial tissues of the central nervous system, are suggestive of a toxic process. But these changes, including infiltration of these tissues with lymphocytes and plasma cells, are not limited to the nervous system. The workers who have examined extra-nervous organs are not many; I have not done so, but undoubtedly such work has been recorded in respect to individual organs from time to time. A complete anatomical examination is on record by Catola[26] in respect of seven cases of dementia paralytica, persons who had had syphilis and had died from seizures or cachexia. There were found in the viscera (especially the liver) vascular and perivascular changes (lymphatic infiltration, plasma cells) and parenchymatous degeneration resembling the changes in the nervous centres.

Spirochætes in the Brain Cortex in Dementia Paralytica.

Our knowledge may be summarised thus in regard to the demonstration in sections and films of the brain cortex.

Noguchi's statistics,[27] as published up to July, 1913, dealt with 200 cases; the organisms were found in nearly 25 per cent. in sections. Marinesco and Minea[28] found them (apparently in sections) in 1 case out of 26—nearly 4 per cent.; Levaditi, Marie, Bankowski,[29] in sections, in 3 out of 32—10 per cent. By the fresh film method of Fontana-Tribondeau (silver impregnation, after fixing and mordanting), Loeffler's fresh method, and dark-ground illumination they found the organism in 8 out of 9 cases—88·8 per cent. It is to be noted that the last-mentioned authors obtained these satisfactory results in cases which died in from 1 to 14 months after the diagnosis of the malady—that is, in rapidly progressing cases; furthermore, 8 of the 9 died from seizures. In Noguchi's original series rather more than one-half of the cases averaged only 17 months in duration. In the case figured by Uhlenhuth and Melzer, in their "Atlas of Experimental Syphilis in Rabbits," a syphiloma was produced in the testicle by inoculation of brain-material from a particularly early case of general paralysis. Scholberg and Goodall examined films prepared from the cortex of the frontal lobe on the morning upon which death occurred in 8 cases, all of them examples of long-standing disease (dementia paralytica), the dark-ground, Indian ink, and Fontana-Tribondeau methods being used. In none were undoubted spirochætes found, although doubtful instances occurred in two of the cases. From the foregoing it appears that statements still vary considerably as to the frequency with which the spirochæte has been demonstrated in the cortex cerebri in dementia paralytica.

Inoculation Experiments.

The following few results are recorded. Noguchi: fresh brain-emulsion of general paralysis of the insane into testicles of 42 rabbits; sclerosis of testis, with T. pallid in 2 (92 and 105 days). But von Jauregg[30] speaks of positive results obtained by Noguchi in 22 out of 36 rabbits so injected, after from 97 to 102 days. Berger[31]: emulsion made from brain-substance obtained by puncturing the frontal lobes, inoculated into rabbit's testicles; 3 of 20 rabbits showed spirochætes in the testicle. Forster and Tomasczewski[32]: the same procedure (the living organisms demonstrated in the brain-substance in 40 per cent. of the cases punctured) failed to inoculate 39 rabbits and 5 apes, although many of the animals had been under observation four months. Greefs[33]: a positive result, inoculating rabbit's testicle with the blood of a general paralytic. Marie, Levaditi, Danylewsky[34] the same; treponema found after 190 days. Uhlenhuth and Melzer[35]: in one case organisms found in testicle (syphiloma) inoculated with brain-emulsion, but only negative results when blood and cerebro-spinal fluid used. Scholberg and Goodall: the testes of 8 rabbits inoculated with emulsion of living spirochætes from primary sores and condylomata. Death in 25 to 45 days. The organisms found in one case only in abundance after 40 days. A portion of the testicle from this was incubated anaerobically, as described below, upon serum-water. No spirochætes found after 35 days.

We also inoculated suspension of the frontal cortex from four general paralytics (long-standing cases), made in from two to seven hours of death, into the testes of 17 rabbits. Of these, four are still alive three and three and a half months after. The testes exhibit nothing abnormal, but two of the rabbits are in a reduced condition, are desquamating and losing fur freely, and have lost weight considerably. The others died in from 66 to 90 days, for reasons unknown. No spirochætes were found in these testes by the fresh film methods. Portions of these testes were placed in serum water, 1 : 3, prepared from a general paralytic's serum; this culture-medium was incubated under strictly anaerobic conditions in vacuum-tubes, or tubes from which all air had been removed and replaced by hydrogen (which gas had previously in both cases been passed through the culture-medium). Some tubes showed organisms, not spirochætes; others remain sterile at the end of 23 days and 86 days. On four occasions we dealt with 50 c.c. of cerebro-spinal fluid collected from several cases of dementia paralytica, the fluid being centrifugalised at 3500 revolutions per minute for three-quarters of an hour to one hour. The deposit was examined by the film-methods, and culture tubes of rabbit's testicle + dilute serum from a general paralytic were inoculated with it; the tubes were incubated under the same strict anaerobic precautions as above described. These results were negative.

From the foregoing it appears that the cultivation of the spirochæte from the brain of general paralytics, whether in living tissues or in culture-media prepared in the most approved manner, is an extremely difficult matter. The methods at present available are very uncertain in respect to results obtained. The negative results of Forster and Tomasczewski are particularly striking, for spirochætes were proved to be abundant and living in the brain-tissue, and had they been dealing with spirochætes from a primary syphilitic lesion they would doubtless have obtained some positive results out of such a large number of inoculations.

Changes in the nervous system as a result of experimental inoculation with material containing spirochæta pallida.—Although many more investigations are required, with parallel observations upon other tissues, it is obvious from those recorded by Jakob and Weygandt[36] and a few others that the entire nervous system is involved in changes of an inflammatory nature in consequence of inoculation of the spirochæte; the morbid process involving primarily the membranes and blood-vessels, with production of inflammatory foci, suggestive of gummata, of abundance of lymphocytes, plasma- and rod-cells, with glia-proliferation, and the like conditions, such as we are familiar with in sections of the general paralytic's brain.

Diphtheroid Organs.

There are bacteria found in the tissues of general paralytics which it is easy to dismiss as merely capable of inducing secondary inflammation, but I do not think we as yet are sufficiently acquainted with them to assert as much as this. Whilst unable to follow Ford Robertson in his views as to the causative rôle in dementia paralytica of certain "diphtheroid" organisms described by him, I think it desirable that his results should be borne in mind, and not unlikely that the record of results obtained by the study of other bacteria will accrue to be collated with his. The diphtheroid organisms described by Ford Robertson[37] have been shown by him in large numbers, and associated with inflammatory changes of the parts involved, invading the walls of the respiratory (including the naso-pharyngeal), alimentary, and genito-urinary tracts, in the foci of catarrhal pneumonia which occur in cases dying in "congestive" seizures, in the walls of the cerebral vessels, in the perineural sheath of the trigeminus, in the pia-arachnoid, in the blood, and the centrifugalised deposit of the cerebro-spinal fluid, in the urine—in all these fluids especially after seizures. They invade the lymphatics of the parts involved. The mucosa of the tracts involved and the subjacent tissues present evidence of chronic inflammation. The bacilli have been cultivated from the blood, urine, and cerebro-spinal fluid. Rats and a goat inoculated with them from a case of general paralysis developed paretic symptoms, and histologically lesions closely resembling those of early general paralysis were found.

At this point I would refer to an interesting statement of Cerletti,[38] made at the Fourteenth Congress of the Società Freniatrica Italiana, and published last year, to the effect that in connexion with "cimurro" (glanders) in dogs, months after recovery from the catarrhal infection a demented state slowly supervenes, with ultimate cachexia and death. It appears that some veterinary surgeons regard this condition as the same as dementia paralytica. In it Cerletti has found a chronic encephalitis with diffuse lymphocytic and plasma-cell infiltration; and the cortical lesions he considers very like those of dementia paralytica.

O'Brien[39] found an identical bacillus to Ford Robertson's in five cases of dementia paralytica, during seizures, in blood from a vein, and in 70 per cent. of 62 cases in the cerebro-spinal fluid; whereas the result was negative in 30 non-general paralytics. In 11 of 14 cases large numbers of the bacillus were found in the stomach-wash after 24 hours' fasting. Characteristic symptoms and histological changes in the cerebral cortex are described in rats, dogs, and goats inoculated with the organism. Flashman and Latham,[40] repeating the experiments of Ford Robertson and Shennan, fed 15 rats on diphtheroids from a case of general paralysis. They describe pronounced inflammatory changes in the brains of these animals. Whilst it is claimed that changes typical of dementia paralytica can be produced in the cerebrum by this feeding process carried out over a long period, the changes described by Flashman and Latham are such as might be induced by various toxic agents; thus, by other organisms as well as those in question. Complement-fixation tests with the diphtheroids as antigen are described by Lind[41]; the results were negative in 45 sera and 34 cerebro-spinal fluids. Similar tests carried out by Eyman and O'Brien[42] gave a positive Wassermann reaction in 36 of 42, or 90 per cent. Candler[43] sought to test the results of Ford Robertson, and his contribution is important, covering a large number of cases of dementia paralytica and of other kinds of insanity, the blood, cerebro-spinal fluid, and urine, and the respiratory, alimentary, and urinary tracts being examined. The total percentage-incidence of diphtheroids in the former was 12·2, in the latter 8·4. No diphtheroids were found in the blood (27 cases, many times examined, including examinations during and after seizures), nor in the cerebro-spinal fluid (9 cases), nor in sections of the brain, although Ford Robertson describes them in such sections. Unlike the other observers quoted, Candler found no histological changes resembling those of dementia paralytica in the brains of rats fed or inoculated with these organisms. A. Marie[44] has also failed to find the diphtheroids in the nervous system or the body-fluids in this disease, and no evidence was elicited by him in favour of their specificity by the agglutination test or by the opsonic index method. Marr failed to cultivate any organisms from the cerebro-spinal fluid in 53 cases of dementia paralytica. The same was the experience of Parkinson[45] in each of 15 general paralytics. Barton White,[46] working in the laboratory of the Cardiff Mental Hospital, examined the blood freshly drawn from a vein in 11 pronounced cases of the disease under strict aseptic precautions, using as media broth in quantity, in Pasteur flasks, and nasgar: the media remained sterile in every case. Other observers have had the same negative results in culture experiments or have failed to find bacteria; and there can be no doubt that in dementia paralytica organisms, whether spirochætes or bacilli (I do not refer to cocci found in terminal conditions), are very difficult to find, and still more difficult to cultivate.

The Question of Lues Nervosa.

Since the demonstration of the spirochæte in the brain of general paralytics attention has been mainly focussed upon a particular problem in the pathology of the disease—namely, its relations to syphilis. The rarity of the disease in syphilitics, the mild nature of the antecedent syphilis in general paralytics, the clinical and pathological peculiarities of general paralysis, the difficulties surrounding the detection and culture of the spirochæte in general paralysis, the difficulty of inoculating animals with this organism as compared with the organism of ordinary syphilis, these and the like considerations have prompted the suggestion of a spirochæte with special affinity for the nervous system, the possibility, in other words, of a *lues nervosa*. The soil is often not a normal one, there being, as has been said above, evidence of neuropathic inheritance in a considerable proportion of general paralytics. Recently (1913), in an instructive article, O. Fischer[47] has dealt with the evidence in favour of a lues nervosa; as, for example, evidence furnished by conjugal general paralysis, by cases in which two or more persons have acquired general paralysis or tabes after infection from a common source (a most extraordinary instance of development of general paralysis by individuals infected from a common source is furnished by Moerchen[48]; no less than 11 men got the disease after infection from the same syphilitic female); by cases of women who have acquired these conditions, rather than ordinary lues, after infection by men suffering from them; and evidence to the effect that of two sets of individuals, one infected by luetics who subsequently got dementia paralytica and the other by luetics who did not, the former are more liable to get a so-called "metalues." Such considerations open up a vista of prolonged and patient inquiry.

A Therapeutic Measure.

At this point it is convenient to refer to a therapeutic measure which has been found of practical utility in the treatment of general paralytics of recent years, and which is founded upon exact investigation—I refer to the administration of hexamethylenetetramine. This drug was probably in the first instance employed in these cases upon the clinical observation that the urine of general paralytics was peculiarly liable to decomposition. I have found little or no reference to the use of the drug in dementia paralytica in the literature, but am aware from communications from colleagues that good effects have been observed as a result of such use, and my experience coincides with theirs. More time is required ere definite statistical statements can be made in respect to this matter, but the impression of certain of us who have used the drug in ordinary institution-cases of dementia paralytica is to the effect that it tends to prolong the life of the patient by maintaining him for a longer period in a stationary state or in a remission. As to whether the drug diminishes the number of convulsive seizures further evidence is needed. The only figures with which I am acquainted are those of Baird,[49] which go to show that it does. Recently Barton White,[50] in a research carried out at the laboratory of the Cardiff Mental Hospital, found that the urine showed various micro-organisms in each of 10 general paralytics, whereas in 10 controls of other forms of mental disorder they occurred in only 3; further, that the urine became sterile after a course of hexamethylenetetramine, with formation of formaldehyde (as demonstrated in the urine), and remained so for periods extending to four weeks; so that one concludes that the urine can be maintained in a sterile condition by the regular administration of this drug. Urotropin is reported to appear to some extent in the cerebro-spinal fluid when taken by the mouth. Possibly it acts beneficially by warding off secondary infections. Further observation and inquiry are needed, and meantime the administration of the drug referred to would appear proper in early cases, such as are not seen in institutions.

MICRO-ORGANISMS AND TOXINS IN CONNEXION WITH MENTAL DISEASES.

The evidence furnished by the morbid histology of the brain in the acute and recent psychoses is not in favour of anything approaching a virulent toxæmia, with the doubtful exception of the condition known as "acute delirium," or "acute delirious mania"; neither does clinical evidence point to such, with the same possible exception. The temperature-pulse-respiration chart in cases of acute and recent mental disorders shows very little evidence of febrile reaction. Toxins, if any, must be of a low degree of virulence. We know, however, that various drugs which are incapable of producing the bodily disturbance or reaction which accompanies an attack of one of the specific fevers, and from this point of view are not virulent, are nevertheless able to produce very definite mental disturbance. Whilst morbid histology affords practically no evidence of acute toxæmia in the psychoses, the changes found are quite compatible with the operation of a toxin of a milder kind. This is true, apart from dementia paralytica, for acute delirium, acute mania or melancholia, the psychoses of exhaustion. Cases of the disorders grouped under the name "dementia præcox" do not, for all practical purposes, come to necropsy in the acute and recent phase, so that, unfortunately, we have no sufficient information in respect to these. The examination of the blood in the acute and recent psychoses with the usual aerobic methods, upon the usual culture media, gives negative results. Sewell and McDowall[51] investigated the blood for organisms in 50 cases of insanity, of which 12 were cases of mania, 27 of melancholia, and 11 of various chronic psychoses; they were only able to record one positive result, but in this case the presence of a coccus was associated with intercurrent septicæmia. A research by Gay and Southard is worth mention, as it embraced 100 cases of mental disease, although observations were made on the cadaver; the bodies, however, had been kept at freezing point. They obtained cultures in no less than 59 per cent. in the case of the blood and 72 per cent. in that of the cerebro-spinal fluid; colonies upon plates were also more abundant in the latter case. It is to be observed, however, that the cases examined were chiefly in a chronic condition of mental disorder, and had succumbed to exhaustion. The organisms found were of the most varied description, chiefly micrococci and bacillus coli, the most curious feature being the frequent association of bacillus coli with evidence of fatty degeneration of the spinal cord, and of generalised softening of the brain, so that the authors believe that a definite relationship must be assumed to exist between bacillus coli and its toxins and nerve-fibre degeneration.

Of all mental disorders the condition known as "acute delirium," or "acute delirious mania," is that in which we should most expect to find evidence of bacterial origin, on account of the acuteness of all the mental symptoms and the existence of grave bodily illness. The rarity of this condition has largely prevented its proper study; amongst the rate-supported insane, at any rate, it is extremely rare, and I can only remember to have seen two or three cases in my experience of 24 years, and one of these was at Bethlem Royal Hospital, which does not receive the rate-supported. In my student days at Bethlem the question was discussed, by Percy Smith especially, as to whether this condition was merely the gravest form of acute mania or a separate entity; and this question still remains unanswered. No significance is to be attached upon scientific grounds to any organism hitherto found in the circulation in this disease. The condition is seen in connexion with typhoid and other infectious disorders, and it would therefore appear that more than one toxic agent can produce it, unless, indeed, such acts merely as a predisposing cause. Kozowsky[52] in a recent communication upon the pathology of acute delirium, states that staphylococci, diplococci, and the influenza bacillus have all been found in cases of that disorder, and this is not surprising, seeing that the state follows upon diseases in which these organisms are causal agents. I am not aware of any record of animal inoculations in connexion with cases of acute delirium. The psychoses following upon specific fevers but rarely come to necropsy, so that we have no sufficient information as to the histological conditions present in the brain in such cases.

The Infection-Psychoses.

This brings me to the consideration of the psychoses due to infection- or intoxication-processes. By these we mean disorders of mind, which amount to more than mere transitory delirium, and which supervene in the course of, or follow upon, infectious fevers, or specific diseases attended with fever. These psychoses seem to me peculiarly worthy of study, for thereby we are likely to obtain an insight into the pathogenesis of similar disorders of mind which arise without any obvious cause other than a mere deterioration of health. The infection-psychoses, as they may for convenience be termed, are rarely seen in public institutions for the insane; in the first place, they are uncommon; in the second, they are mostly of brief duration. They are to be met with more frequently in the psychiatric cliniques of university towns on the continent, no doubt because the patients are readily transferred thither from the ordinary medical cliniques when they become troublesome—a proceeding involving no legal formalities—and they are also directly received into such with the minimum of trouble.

Amongst the specific fevers, typhoid yielded up to recent years the largest number of these cases, but of late years influenza has been a potent factor. Friedländer gives 1·5 to 2·5 per cent. as the number of cases of typhoid in which psychoses occur. Erysipelas affecting the head is probably the next most frequent cause; thereafter come malaria and pneumonia. Puerperal insanity, which belongs to the category of the infection-psychoses, is in a class by itself. These psychoses, whilst no doubt mainly appearing after the bodily illness has manifested itself, or at its close, may appear in the form of delirium or mania before there is any fever, and are then only ascribable to a toxin, and fairly comparable to a psychosis due to some drug, to a poisonous substance used in an industry, or to ptomaines. Furthermore, the mental disorder does not by any means necessarily go with high temperatures, even when it appears after the bodily illness has become definitely established. This is the first instructive lesson I draw from a study of the infection-psychoses; they illustrate (in common with insanity from drug-poisoning) the ability of a toxin to cause insanity. A second instructive fact is that there is no difference in the kind of symptoms by which one can distinguish the psychosis caused by one infection or intoxication from that caused by another. The brain reacts in common, limited, well-recognised ways, irrespective of the nature of the provocative disease, it reacts to toxins; from which it appears that different toxins are capable of producing the same effects upon the cerebral cortex.

These psychoses exemplify the most diverse clinical forms; thus, acute delirious mania, mania, melancholia, states resembling closely certain of those deemed characteristic of dementia præcox, others resembling those seen in insanity with epilepsy (e.g., states of agitation, post-epileptic stupor), acute confusional conditions, an exalted state resembling that seen in dementia paralytica, the syndrome of Korsákow—with its preliminary agitation and subsequent disorder of memory and attention-power; above all, they take the form of acute hallucinatory insanity. In the post-febrile period dementia of varying degree is shown. In short, if we exclude systematised delusional insanity, the above summary includes practically all the forms in which disease of the mind manifests itself. The specific fevers can reproduce them all, so that differential diagnosis from like mental disorders as ordinarily seen is for the time being practically impossible. The only essential difference is that in the symptomatic psychosis the disorder is commonly of shorter duration than in the so-called "endogenous" psychoses, although after typhoid and influenza varying degrees of mental defect may last for years. The above considerations naturally prompt the inquiry as to whether the forms of insanity we are accustomed to meet with, of unknown origin, are due also to toxins, exogenous or endogenous. A third point which is noticeable in connexion with the infection-psychoses is that one and the same provocative disease (toxin) produces different forms of mental disorder in different persons, which is presumably due to individual peculiarities.

A special reference seems desirable to the pseudo-general paralysis which occurs in connexion with some of the specific fevers, a point alluded to by Bonhoeffer[53] in his study of the symptomatic psychoses. As far as I am aware, the pupillary reflexes are never altered, but the typical mental symptoms are reproduced, and the speech is affected, although not typically, yet in such manner as to cause difficulty in diagnosis. The knee-jerks may be exaggerated. As the pupillary phenomena are not present in every case of true general paralysis it must have been practically impossible to diagnose the simulated from the real disease by the mere symptoms in days prior to the introduction of serological, chemical, and cytological tests in respect of the cerebro-spinal fluid. A further special reference may be made to the occurrence of symptoms indistinguishable from those given as characteristic of the katatonic variety of dementia præcox. There are the stupor, flexibilitas cerea, verbigeration, echolalia, and echopraxia, stereotypy, rhythmical movements, rigidity of attitude, grimacing, mimicking, tics, and negativism; in fact, there is the entire symptom-complex of this type of dementia præcox. Bonhoeffer has recently given some good descriptions of this condition following upon typhoid and pneumonia. A condition resembling katatonic stupor has been described[54] as developing in a case of pellagra; the patient apparently had a predisposition to mental disorder, as she had an attack of mania six years previously, before the pellagra showed itself. The infection-psychoses furnish instances in which a given symptom-complex is produced by more than one morbific agency, and therefore constitute an argument against specificity in causation of the various kinds of insanity. The abnormal constitution of the brain in individuals falling victims to mental disorder would seem to be of more importance than the exciting cause; the *irritabile* more important than the *irritans*.

Disorders of Metabolism in Insanity.

In the foregoing remarks I have dwelt upon matters histological and bacteriological. I have endeavoured to indicate how, in respect to the former branch of study, the interest of research workers in the domain of mental disorders showed undoubted signs of slackening some 15 to 20 years ago, so that there were those who said that no more good was to be derived from histological work. Yet a remarkable impetus was shortly to be given to such by the admirable work, with new methods, of Nissl and Alzheimer, to whose "Histologische und Histopathologische Arbeiten" we are so much indebted. I have endeavoured to indicate the passage of the attention of research workers through the domain of bacteriology. Here, again, the negative nature of the results obtained has been the cause of discouragement, but the improvement in technique and elaboration of methods —not yet taken advantage of in the laboratories of mental hospitals—will demand for this branch of work closer attention than ever, to say nothing of the necessity for the study of the problems of artificially-conferred immunity. Following the stream of tendency, interest has passed on to problems in the domains of physiology and chemistry. During the past six years a considerable number of publications has appeared concerned with metabolism-experiments in the insane, and chemical examinations of the brain, and especially of the excretions, have been carried out. It is regrettable that most of the work done in respect to metabolism and chemical research is of no value, owing to lack of training on the part of those who have carried it out. The study of metabolism in mental disorders is in its infancy; methods hitherto employed are inadequate to deal with the subject. The same is true of chemical methods. The most concordant results are in respect to epilepsy with insanity, dementia paralytica, dementia præcox, and manic-depressive insanity. But the changes observed up to the present are not pathognomonic. At some of the continental psychiatric clinics it is now feasible to prosecute research in metabolism and chemistry, and even in this country a start has been made by way of providing like facilities.

One of the most critical surveys of the present position as to our knowledge of metabolism in the insanities is by Allers,[55] of the Munich Psychiatric Clinique. To his survey I am indebted, as also to the criticisms of Dr. R. V. Stanford, research chemist at the Cardiff Mental Hospital. That psychical disturbances influence metabolism is but another way of saying that the body is influenced by the mind. It having been demonstrated in a given case of insanity that a disorder of metabolism is present, the question of cause and effect remains to be determined. One of the best instances of parallelism between disorder of mind and disorder of metabolism, and one of the readiest to suggest itself, is the occurrence of glycosuria in conditions of mental agitation, or agitation with depression, such as occur in different kinds of insanity. According to Allers the periods of excitement of general paralytics and epileptics are associated with an excretion of acetone-bodies. The origin of these is a matter of speculation. Then there is the phosphaturia connected with states of mental agitation. I fear that in such instances as these it is difficult to get beyond the unsatisfactory position of psycho-physical parallelism. More satisfactory is such a case as that described by Kauffmann[56] of typical "angst-psychose" and diabetes, in which the mental disorder was worse or better with the rise or fall of sugar in the urine. All carbohydrates were withdrawn, and the sugar fell to 3 per cent., 0·3 per cent., and 0 per cent. The psychosis disappeared with the sugar. And a like case, by Fornaca,[57] of manic-depressive insanity, excreting a very large amount of glucose about the time of the depression-phase. Antidiabetic treatment produced rapid improvement. In myxœdema, in which the physical change has its psychical counterpart, there is a general lowering of metabolism, as might be expected, since it is known that the thyroid gland has a general stimulating influence upon the exchanges. Magnus Levy showed that the metabolism in myxœdema is decidedly raised by the administration of thyroid gland. The production of energy in this disease, as represented in calories, is greatly below normal,[58] and von Bergmann states that a 50 per cent. increase in energy is brought about by administration of thyroid. And Bornstein, in the work I shall presently refer to, observes that the administration of thyroid causes an increase in oxidation in myxœdematous cases, as measured by the Zuntz-Geppert method of "short experiments." Improvement in the general health by thyroid treatment is accompanied by mental improvement. In such instances as the above one is justified in ascribing the mental to the metabolic disorder.

Thyroid Treatment.

At this point I may appropriately refer to the question of the treatment of certain cases of insanity by thyroid extract. For 20–24 years—I think that period is correct—this treatment has been in use, more or less; extolled by the few, faintly praised or rejected by the majority. It has been mainly used, I believe, in cases of stupor and stupor with melancholia, or cases of confusional insanity; in brief, cases which have certain features in common with myxœdematous cases. What we know of the $O-CO_2$ exchange in cases of dementia præcox (under which term cases of stupor are now included) justifies the use of a substance like thyroid, which promotes oxidation changes. I have employed it for many years in such cases, and candour compels me to admit that until the last two years the failures in my experience were more numerous than the successes. I now attribute at any rate many of those failures to the circumstance that I gave insufficient doses of thyroid. My recent experience entirely justifies those who have insisted upon large doses if any benefit is to follow. Thyroid I have found not only beneficial in acute stupor, or acute dementia, and "confusional" states, but also at a later stage of these conditions and of cases of recent melancholia, when the patient has improved to a certain point and there remained. In these the administration of thyroid has appeared to complete the process of recovery. Richter,[59] it is instructive to note, states in his work on metabolism and its diseases that it is especially when the metabolism is commencing to increase that thyroid gland acts well in simulating it. I shall now give briefly the details of the treatment of 11 cases of mental disorder by this method. These patients, in accordance with my practice, were kept in bed during the whole course of treatment, usually in the open air, upon liberal diet; and the temperature, pulse, and respiration were taken throughout twice daily. From Table I. (illustrating six of these cases which were discharged) it is seen that all had been mentally ill for several months before the thyroid treatment was started, which was in considerable measure unavoidable owing to the delay which occurred in sending them to the mental hospital. In this respect the method of treatment was at a disadvantage. The large total amount of thyroid given, the lengthy periods over which the treatment extended, the large maximum doses reached—these are features worthy of attention. The pulse-rate was affected in the direction of increase very consistently, as was to be expected, whereas the temperature and respiration were affected but slightly, or not at all. As to weight-changes, gain of weight during the treatment occurred in 2 of 11 cases; 1 showed no change; in all the others a loss was noted, as we should expect; but after cessation of treatment weight was rapidly regained, and in 8 instances there was ultimately a gain on the original weight.

TABLE I.—*Thyroid Administration in Mental Disorders.*

Case and diagnosis.	Duration of malady before treatment started.	Total thyroid given in grains, and in what period.	Maximum amount per diem in grains, and for how long.	Particulars of pulse-rate during treatment.	Particulars of respiration.	Particulars of temperature.	Weight changes.	Result.
A. E., aged 17. Dementia at puberty.	3–4 months	850. 5 weeks.	45. 4 days.	Notable and consistent +. Maximum + 40 beats per minute.	Not increased.	+ from subnormal to normal, or slightly over.	Gained 6 lb. Gained 1 st. one month after treatment.	Discharged recovered.
W. D., aged 27. Stupor after childbirth.	5–6 months.	1265. 6 weeks.	60. 3 days.	Consistent + to maximum + of 22 beats per minute.	,,	Occasional slight +, mostly subnormal.	No change. Gain of 4 lb. in a fortnight after treatment. No further gain.	,,
J. H., aged 28. Dementia.	8–9 months.	1435. 7 weeks.	55. 1 day.	Consistent +. Maximum + of 42 beats per minute.	Consistent + to maximum of 10 per minute.	Rises and falls, but often from 99° to 100°.	Lost 8 lb. Regained this in 14 days. Final gain 3 lb.	Discharged relieved.
J. O. T., aged 28. Dementia.	2¾ years.	1060. 6 weeks.	45. 6 days.	Consistent + throughout. Maximum + = 42 beats per minute.	Consistent + to maximum of 14 per minute.	Rises to 99°–100°. Also falls to below normal.	Lost first 4 lb. Regained 9 lb. in one month after treatment. Final loss of 6 lb.	Discharged recovered.
A. W., aged 16. Dementia at puberty.	4–5 months.	At least 580. 4–8 weeks.	38. 5 days.	Consistent +. Maximum + = 20 beats per minute.	Not increased.	Rises and falls (rises to 99°–100°).	Lost 2½ lb. Gradually gained, after treatment, to gain of 3 st. on original weight by discharge.	,,
A. M. B., aged 17. Dementia at puberty.	6 months.	1010. 5 weeks.	60. 3 days.	Consistent + to maximum + of 40 beats per minute.	,,	With few rises to 99°, remained subnormal.	Lost 6 lb. Regained, and final gain after treatment—6½ lb. (on original weight) end of one month.	,,

+ = Increase.

The results, it will be seen, were highly satisfactory, since no less than 6 patients of 11 left well; and all the others save one showed a definite improvement, and this one had been deranged for no less than three years when treatment was employed. I shall presently have to refer to such small amount of work as has been done upon the histology of the ductless glands in insanity, and would here merely observe that there is not as yet any justification from the standpoint of morbid anatomy for thyroid treatment in the cases which are placed in the group "dementia præcox," but in some cases of epilepsy there is, assuming, that is to say, that the morbid changes shown in the thyroid in these cases are primary and not secondary.

Upon this basis I have treated the following cases of epileptic insanity experimentally, with the result stated. Table II. shows that the number of fits were reduced by the thyroid treatment in 11 out of 12 cases, and in some the reduction was very marked. (See D. McG., W. B., T. H., M. H.) The patients were not on any other drug, but they were kept in bed on ordinary diet with, in some cases, extras, such as milk and egg. A reduction of weight is shown to have occurred in all except one. The observations as to the pulse, respiration, and temperature made in connexion with the first series of cases apply also to this series. On the basis of these results I kept certain of these patients upon 5 grains of thyroid daily for a prolonged period; the patients were up as usual and on their usual diet. Table III. shows the results.

TABLE II.—*Thyroid Administration in Epilepsy with Insanity.*

Case.	Monthly average number of fits for three months before treatment.	Number of fits in a period before treatment.	Number of fits in same period during treatment.	Weight on commencing.	Weight on terminating.	Total amount of thyroid in grains during period of treatment.	Maximum amount in grains per diem, and for how long.
				st. lb.	st. lb.		
1. D. McG.	21	31 days. 31.	31 days. 9.	9 10	8 10	31 days. 660.	30. 14 days.
2. T. I.	12	31 days. 14.	31 days. 10.	9 12	9 1	31 days. 715.	30. 14 days.
3. W. B.	19	35 days. 14.	35 days. 7.	9 6	9 0	35 days. 1060.	40. 9 days.
4. W. R.	20	39 days. 21.	39 days. 22.	9 4	8 12	39 days. 1125.	40. 8 days.
5. T. H.	29	31 days. 40.	30 days. 5.	7 9	7 2½	30 days. 720.	30. 16 days.
6. L. C.	22	31 days. 18.	30 days. 12.	6 0	6 0½	30 days. 720.	30. 16 days.
7. M. H.	33	31 days. 36.	31 days. 13.	6 7	5 11	31 days. 860.	30. 25 days.
8. C. M.	31	31 days. 20.	31 days. 12.	7 10	6 12	31 days. 850.	30. 25 days.
9. D. L.	9	46 days. 14.	46 days. 9.	9 4	8 9½	46 days. 700.	25. 11 days.
10. W. C.	16	38 days. 22.	38 days. 13.	8 12	8 8	38 days. 565.	25. 6 days.
11. A. R.	13	52 days. 22.	52 days. 13.	5 13	5 6	52 days. 465.	15. 13 days.
12. A. M. (in residence one month only.)	Number of fits one month before treatment. 14	—	Number of fits during 10 weeks' treatment. 6 (instead of estimated 35).	5 12	5 4	31 days. 1775.	60. 4 days.

TABLE III.—*Thyroid Administration in Epilepsy with Insanity. Prolonged Treatment.*

Case.	No. of fits during a prolonged period: 5 grains thyroid daily.	No. of fits during same period, 12 months previously, without thyroid.
D. McG.	22	46
W. R.	13	38
D. L.	31 (3 months)	50 (3 months).
M. H.	28 (3 ,,)	43 (3 months preceding).
T. H.	15	35
L. C.	21	31
C. M.	22	30

It is seen that a substantial reduction in the number of fits occurred in many of these cases, amounting in some to from 52 per cent. to 65 per cent., as a result of a small daily dose of thyroid. It remains to be seen whether the effects of the drug are maintained for such a period as a year. No ill-effects were observed. This action of thyroid gland is of considerable theoretical interest, and the results obtained naturally prompt the inquiry whether benefit would follow upon the administration of other ductless glands in like cases or in cases where thyroid failed. I find that Cerf and Vassale [60] have reported several cases of epilepsy which were clearly improved by thyroid treatment, but in other cases no benefit accrued. The observations referred to above afford some grounds for the view that the function of the thyroid gland is impaired in some cases of so-called "dementia præcox" and of epilepsy, with and without insanity. These cases appear suitable for the application of the Abderhalden ferment test, to the employment of which in mental disorders I shall later refer, and also for testing on the principle of complement deviation.

Metabolism in Epilepsy.

The work of Rohde [61] is cited by Allers as particularly exact and critical. He finds in severe cases a disturbance in nitrogen metabolism, there being a retention of nitrogen, which reaches its maximum immediately before the fit. The pre-paroxysmal stage is also marked by the appearance of an increased quantity of ether-soluble acids. The significance of this expression is dubious and it requires explanation. The retention of N would appear to be the characteristic of the fit-free stage, but it is not peculiar to epilepsy, for a similar condition has been described in connexion with the katatonic phase of dementia præcox and in dementia paralytica. After the epileptic seizure there is an increased excretion of N, which reaches a maximum at the close of a series of fits, and after the *status* there is a negative balance. Uric and phosphoric acids are also excreted in increased amounts and also lactic acid; the last is probably due to muscular contractions and asphyxia. Guidi,[62] from his researches into the pathogenesis of epilepsy, also describes a profound alteration in nitrogenous metabolism.

The above reference to the treatment of epilepsy prompts me to bring forward Table IV., which deals with the results of treatment by means of diet and small doses of bromide. The patients in question were kept on the following diet:—Breakfast: bread, 6 oz.; margarine, ½ oz.; tea, 1 pint. Dinner: potatoes, 12 oz.; milk, ½ pint; cheese, 1 oz. Tea: as breakfast. On Sundays only was meat allowed—7 oz. Salt on the table at dinner was replaced by 10 grains of sodium bromide dusted over the food. This was all the bromide received—a very small amount for insane epileptics. None of these patients was upon drug treatment prior to the issue of special diet. The general health was not adversely affected by the diet. Whilst five patients lost from 2 lb. to 6 lb. in weight at the end of the period of treatment seven gained from 1 lb. to 11 lb.; one showed no change.

TABLE IV.—*Effect of Special Diet plus a Small Daily Dose of Sodium Bromide in Reducing Epileptic Seizures.*

Case.	December, 1912, to August, 1913 (9 months). No. of fits before treatment.	September, 1913, to May, 1914 (9 months). No. of fits during treatment.
C.B.	54	21
E.C.	71	36
C.D.	73	22
M.E.	130	86
J.J.	29	16
E.L.	5	11
C.M.	14	6
M.R.	90	27
M.S.	49	20
L.T.	7	2
E.Y.	74	64
C.R.	64	69
E.F.	26	13
Total ...	686	Total ... 393

Metabolism in Dementia Paralytica.

The study of metabolism in this disease is rendered extremely laborious and uncertain owing to the restlessness of the patients and the difficulty of obtaining 24-hour specimens of the excreta. In 1908 Kauffmann[63] wrote a monograph embracing the study of a few cases, but the value of his laborious work is much diminished by reason of its unsystematic and diffuse nature. He brings out the point of the disturbance of the water balance; the balance is negative, the loss of water partly accounting for the enormous loss of weight in this disease. Other workers, as Allers (see below), refer to the great variations in the water balance. There are, further, great variations in weight not dependent upon food intake. The loss of weight is not counterbalanced by subcutaneous infusion of salt solution. The process of heat regulation is also disturbed. For the temporary febrile states which one observes in general paralytics, if the temperature is taken regularly every three or four hours, and for which there is no apparent cause, Kauffmann suggests, by way of explanation, the accumulation of intermediate products of metabolism. The fever thus produced brings about increased oxidation and so becomes extinguished. These febrile states have commonly been explained upon a theory of infection and not upon one of auto-intoxication. In dementia paralytica, and, in fact, in all psychoses leading to dementia, products of degeneration of nervous tissue (*abbau produkte*) are to be found in the glia cells, and cells of the adventitia of blood-vessels, in considerable, sometimes in enormous, amount. These have commonly been looked upon as of a fatty nature, but on insufficient evidence. It remains to be seen what they really are from a chemical standpoint and, by experiment, what noxious influence they may have. In passing I would observe that the rôle of the spider-cells of the glia in absorbing and transmitting the products of parenchymatous degeneration to the lymph-system of the brain has not been demonstrated for the first time within the last few years by the methods of Alzheimer, as one might conclude from a perusal of recent literature, but was exceedingly well demonstrated by Bevan Lewis at the West Riding Asylum, Wakefield, some 22 years ago. On the other hand, there is as yet no evidence that these cells have the phagocytic rôle which he ascribed to them. Kauffmann's work goes to show that in dementia paralytica great changes in metabolism alternate with periods of relatively normal metabolism, which correspond on the clinical side with remission.

Folin's[64] "Studies in Metabolism," dealing with the urine, still constitute probably the most complete experiments we have in the domain of insanity. He emphasises the extreme fluctuations —much greater than in normal persons on the same diet and under the same conditions—shown in the daily amounts of the urinary constituents in dementia paralytica. That great variations occur in the total quantity of urine is obvious when 24-hour amounts are collected. He notes the marked tendency towards lowness of the nitrogen-sulphur ratio, which Allers (see below) confirms; a correct interpretation is to be found in a disorder involving excessive destruction of protein in the body. Folin speaks of a "strong suggestion of metabolic disorder" in this disease, but goes no further than this. In other cases he examined, of non-general paralytics, illustrative of various insanities, chiefly manic-depressive and dementia præcox, Folin found also pronounced variations from standard values in the urine, but these could not be correlated with any specific mental condition. I do not see that any useful purpose is at present to be served by statements as to the presence in the serum, in increased amount, of "lecithin" in dementia paralytica and epilepsy—such statements as have been made by Bornstein[65] and by Peritz.[66] These statements are based upon assumptions which the present state of chemical knowledge does not appear to warrant. Competent chemical opinion (which I have referred to above) leads me to believe that the term "lecithin" is one to avoid; it appears to be a hypothetical term. "Ether-soluble phosphates" contain phosphorus which can be estimated, but to go further, and calculate from this the amount of a hypothetical substance ("lecithin"), seems to be no more than make-believe. Recently Allers[67] has published the results of a prolonged research in the metabolism of dementia paralytica, his chief conclusions being that endogenous protein-metabolism is increased, as evidenced by the negative nitrogen (and sulphur) balance, with uniform intake of nitrogen. Nevertheless, the metabolic changes are not carried out to their end stages; they are quantitatively greater but qualitatively deficient—incomplete. These definite metabolic changes, occurring at any rate in certain phases of the disease, are regarded as showing the existence of a general, not merely a cerebro-spinal, disorder. Before their significance for dementia paralytica can be estimated control experiments in other organic diseases of the nervous system are necessary, but these, as Allers points out, are as good as non-existent. It is highly significant that considerable metabolic disturbance may be present with but small loss in weight, for in persons prone to mental disorder slight losses in weight frequently go with a definite disturbance of the mental balance.

Metabolism in Dementia Præcox.

The katatonic form has been carefully investigated by Rosenfeld,[68] the four cases he worked with being in a stuporose state; they were upon a fixed diet and fed by tube. The positive result was that N was retained in considerable quantity in all cases, even in periods when insufficient food was taken and the body-weight sank. The nitrogen he believed to be in the form of available free protein, and for reasons he states. Pighini[69] obtained a like result but in the chronic phase of the disease (which is characterised by dementia, negativism, tics, and stereotypy), and phosphorus was also excreted in diminished quantity, whilst excretion of calcium and sulphur was increased. In the acute phase, or with exacerbations, characterised by motor restlessness, impulsiveness, and sensory excitement, the N-balance was negative, and sulphur and phosphorus (especially neutral sulphur) were excreted in increased quantity, which Pighini ascribes to increased nucleo-protein katabolism. In the final, chronic stage, characterised by dementia—instances of which so largely help to fill asylums—the chemical exchange is physiological, as one would expect. These results are confirmed, in respect to nitrogen and phosphorus, by Nizzi.[70] In the active phase of this disease, as in dementia paralytica, there are great variations in weight, not wholly dependent upon food-intake; the latter may be abundant and absorption good, and yet the patient loses weight. The work of Rosenfeld goes to show that these variations, as in dementia paralytica, are due largely to disturbance in the water balance.

Turning now to the researches of Bornstein[71] upon the respiratory exchange in the fasting condition, the muscles being completely at rest (the so-called "grund-umsatz"). This observer investigated 12 cases of the hebephrenic type of dementia præcox by the Zuntz-Geppert method, which permits of the collection for analysis of an average sample of the expired air obtained from a series of natural expirations. In the majority of these he found a marked diminution in oxidation, the O-CO_2 exchange amounting to only from 75 per cent. to 94 per cent. of the normal, as measured in calories. Although the latter figure is within physiological limits, Bornstein points out that it was only reached because the patients moved, and so vitiated the experiment.

Grafe,[72] in 18 cases of stupor occurring in different forms of mental disorder—such as the katatonic form of dementia præcox, dementia paralytica—found a definite lowering of metabolism, especially in the dementia præcox cases. The production of heat was diminished to 39 per cent. below normal. Apart from myxœdema, such an extreme reduction is believed to be very rare. In these cases there was no marked emaciation and no hypotonicity of muscle. And such reduction is, according to Grafe, not found in chronic under-nutrition. From the researches of Bornstein, Bornstein and Oven, and Grafe it follows that the exchange of energy, as estimated in calories, is very considerably diminished, and below the limit of physiological variation, in some cases of dementia præcox. The amplification of this work is to be desired, and the verification of Pighini's observation, as to the increased elimination of neutral sulphur in the active phase of dementia præcox. Koch and Mann,[73] examining the brain in nine cases of this condition, found a diminution in neutral sulphur, which was independent of the cause of death, a result which accords with the observations of Pighini. The brains of general paralytics did not show any marked change in the neutral sulphur content. It is interesting that a high percentage of neutral sulphur is stated to be eliminated in certain forms of intoxication, as by phosphorus, cyanide, chloroform, chloral; and also in diabetes and pernicious anæmia.

Extremely little experimental work has been done in the metabolism of manic-depressive insanity. Seige[74] found in three cases of melancholia a marked tendency to retention of nitrogen to a certain maximum point, upon attaining which a large quantity of nitrogen is suddenly excreted. With the retention there was several times observed marked emotional disturbance. The retention and excessive excretion of nitrogen in other psychoses also have been recorded above.

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UNIVERSITY OF OXFORD.—Dr. Alexander George Gibson, Christ Church, has been appointed University lecturer in morbid anatomy.

A CASE OF LEPROSY TREATED WITH RADIUM AND DIATHERMY.

By C. E. IREDELL, M.D. Lond., M.R.C.P. Lond.,
SURGEON TO THE ACTINO-THERAPEUTIC DEPARTMENT, GUY'S HOSPITAL.

Cases of leprosy occurring in medical men are rare, and I believe that none so far has been described in which radium and diathermy have been used. The case here recorded is that of a medical man who was superintendent of a leper asylum from 1901 to 1908.

In 1910 the patient first noticed a sensation of pins and needles in his left arm. This sensation gradually increased, and in the month of September while shaving he noticed on his left arm some maculæ with fawn-coloured centres and dusky borders. He at once thought that he might be going through the preliminary stages of leprosy, and on making himself sweat profusely he noticed that there was a dry patch on the left wrist extending over the fourth and fifth metacarpal bones, the other side and the rest of his body being quite wet. He then went to Dr. F. M. Sandwith, who hoped he had psoriasis but thought it might be leprosy, and also to Dr. J. M. H. MacLeod, who, on finding that a test-tube of boiling water produced no sensation of heat in the left arm, considered that he was undoubtedly suffering from maculo-anæsthetic leprosy. Shortly after this a macule appeared on the right hip. His blood taken from the macule, when examined by the late Dr. H. R. Dean, contained no B. lepræ and gave a negative Wassermann reaction. Cramps in the flexor plantar muscles and twitchings of the muscles of the hands, especially of the left adductor pollicis, next appeared, and in June, 1911, the numbness of the left little and ring fingers became more marked and the maculæ had increased in size and number. On the right cheek there was a leprome of the size of a pea. By this time the patient was never absolutely free from pain in the ulnar nerve, which, however, did not prevent sleep. This increase of pain was largely due to bruising the nerve by falling on stepping stones. He could not tell the position of the little finger without looking at it, and there was a feeling of discomfort in the left axilla. Over the left trochanter femoris was a patch of the size of the palm of the hand, which was less sensitive than normal. In November of the same year he felt that the right ulnar nerve was showing signs of being affected. He was unable to approximate the little and ring fingers of the left hand, and the ridges of the pad of the little and ring fingers were becoming obliterated. In January, 1912, he began to take iodated chaulmoogra oil. A swelling appeared on the lower lip which was considered by Dr. Sandwith and Dr. MacLeod to be a leprome. In May the maculæ had almost cleared up, but the nervous symptoms remained the same. In April, 1913, he noticed blood-stained mucus in the nasal passages, but on examination no B. lepræ was found. This search for the bacillus in the nose has been repeated frequently, always with negative results. In September, 1913, the leprome in the lower lip began to fluctuate, and Dr. J. W. H. Eyre found the B. lepræ in the pus from it. In October an application of radium of 25 minutes was given to the leprome, and a fortnight later, after discharging freely, it healed up. Between November, 1913, and April, 1914, inclusive, six applications of 22½ mgm. of radium were given to the ulnar nerve. In January, 1914, he began to be troubled with abdominal symptoms, and in April last he wrote: "Four times since Jan. 3rd I have been in bed for three days at a time with pain in the abdomen shooting all along the large intestine from the epigastrium to the end of the sigmoid flexure. Some considerable constipation with difficulty in extruding the fæces unless by an aperient was present, and I sometimes vomited without any feeling of nausea. I took blue pill, Hunyadi Janos, &c., with little effect, and stayed in bed and had only milk puddings, &c. This day I had radium as usual, and then diathermy to arms and afterwards from the right hypochondrium to the left groin. The relief to my arm was marked, and the next day I passed a very copious solid motion, and this was repeated daily. I was also free from abdominal pain." On June 10th he wrote: "The radium seemed to relieve the pain in the arm, and certainly it broke down a leprome in the lip, so that now there is only a small, dry, hard sebaceous gland instead of a leprome bigger than a pea. On the other hand, I am under the impression that the diathermy gave me more relief. I am hoping that the atrophied muscles of the thumb are plumper and that the contraction of the little finger is less. I also notice that I now have only undulating contraction and movements of the fingers and no fibrillations."

In this case three facts are specially worthy of note: (1) that the patient is better in all respects than he was six months ago; (2) that his improvement began when diathermy was started; and (3) that he felt better directly after each treatment. The disease in his case has been characterised by (*a*) maculæ, (*b*) two lepromes, (*c*) neuritic affections, and (*d*) intestinal trouble.

(*a*) These were the symptoms of the first stage of the disease and passed off before treatment was begun.

(*b*) The leprome on the cheek disappeared spontaneously; that on the lip was not treated with diathermy, and therefore it cannot be said what the effect of diathermy would have been, but it certainly seemed to respond at once to radium treatment.

(*c*) The effect of diathermy on the patient's ulnar nerve was remarkable. For some time he had been in the habit of putting his arm in a hot bath in order to ease the pain. After holding two electrodes in his hands for 20 minutes' treatment the pain in the arm was far more relieved than it had been by the hot baths, and he found that he was able to move the little finger better than he did before. Some twinges of the left external peroneal nerve cleared up with one application.

(*d*) No less striking than the effect of the treatment on the nerves was the effect on the abdominal trouble. While the treatment was in progress peristalsis was distinctly perceptible to the patient, and in the course of the 24 hours following very copious evacuations followed, although no drug was used. This is in marked contrast to what had happened in the first three attacks, when it was found necessary to use aperients largely. Since April, when the treatment started, he has had five treatments at intervals of a few weeks, and on two occasions he has spent a week in town and had treatment daily with corresponding benefit.

Dr. W. H. Barber tells me that Professor Unna, of Hamburg, uses the cauterising action of the diathermy current in nodular leprosy with remarkably successful results. So far as I am aware, however, the use of the non-coagulating action of diathermy in leprosy has not been described. In post-mortem examinations on cases of nodular leprosy the abdominal organs, especially the liver and spleen, are very generally found to be infected with the B. lepræ. Presumably they are affected in most cases clinically, and therefore no treatment which neglects them can be considered satisfactory. Pathologically the infection of these organs is of the same nature as that of the nerves in cases of anæsthetic leprosy. If, therefore, the thickening of the nerves can be reduced and the nervous symptoms relieved it seems possible that relief of abdominal symptoms by the same treatment might be attended by a corresponding diminution of the visceral affection. The improvement in the patient has been so marked as to encourage a further trial of it, and the patient, who has seen these notes and consented to their publication, is so much impressed by the treatment that he is contemplating going abroad to try it on a series of cases.

Cumberland-terrace, N.W.

ON SOME CASES OF ANOMALOUS FEVER.

BY SEYMOUR TAYLOR, M.D. ABERD., F.R.C.P. LOND.,
CONSULTING PHYSICIAN TO THE WEST LONDON HOSPITAL.

DURING the past three years I have seen four cases which presented many features of great clinical interest and much difficulty in diagnosis. As these cases in their symptoms and duration were unlike any well-known fever in most respects, I have used the above nomenclature.

It would be tedious to narrate the symptoms of all these cases, as they each bore much similitude one to another, and it will be sufficient if I record one case only, the course and clinical events of which I observed and carefully noted. It is necessary to preface the following remarks by saying that all the patients were elderly, the youngest, a male, being 75 years of age, and the eldest 81 years of age. Three were males, one a female. Singularly enough, in each instance the illness occurred in the early months of the year—January, February, or March. Being at a loss, in each case, to ascertain the cause of the illness, I carefully examined the sanitary arrangements of the houses in which they dwelt, the kitchens and the culinary utensils in use also coming under my inspection. In two of my cases especially I found stew-pans and saucepans, especially the copper ones, in a very dirty and ill-kept condition; and I have ascertained since that in the two earlier cases a similar foul condition obtained in the cooking vessels. Old and incompetent, but trusted, servants, who put their cooking utensils aside after use without any attempt to cleanse them, were probably the guilty cause of the illness in each case, though I was not able completely to establish this suspicion. In each instance the course of the illness ran much on the same lines, and all happily ended in recovery. The following record of one case will therefore suffice.

The patient, aged 78, a man of means, was living in a large, gloomy house superintended by a housekeeper. He complained of no very definite symptoms, but merely a general feeling of illness and malaise. Beyond a slight quickening of the pulse (80) and a little rise in temperature (98·8° F.) I found no signs of any definite disease. The bowels were slightly constipated and the tongue was somewhat furred. I ordered a simple saline purgative and put him on a light diet. On Feb. 12th the temperature had risen to 100·2° and the pulse to 95. He complained of sore throat. A general redness of the fauces was all that could be seen. The tonsils certainly were inflamed also and somewhat more prominent than normal, but there was no sign of diphtheritic membrane and no follicular tonsillitis and no skin eruption. In addition to his medicine he was ordered a warm gargle of weak solution of permanganate of potash. Previously to this a swab from the fauces was taken, but careful bacteriological examination failed to reveal the presence of any micro-organisms other than those often associated with ordinary inflammatory affections of the mouth. In other words, he had no Klebs-Löffler bacilli, but only a small amount of cocci, not of the Fraenkel type, and no evidence of Pfeiffer's bacillus. The teeth and their sockets were in quite a healthy state, as he paid periodic visits to a competent dentist, and had only recently been under his care. On Feb. 14th the patient complained of pain and tenderness in his larynx, and he was aphonic, also slightly deaf. The laryngeal mirror revealed some congestion of the aryteno-epiglottic folds; but the vocal cords were intact, though the mucosa of the trachea was somewhat red and congested. He had much cough, and expectorated with some pain and distress a glairy tenacious mucus, such as is usually observed in the early stages of inflammatory mischief in the upper air passages. His temperature had risen to 102·4° and his pulse to over 100. On Feb. 15th, the fifth day of his illness, the temperature still showed an upward curve, being 104°, though his pulse had only risen to 100. Auscultation of his chest revealed signs of rather extensive and general bronchitis, and the bases of the lungs were engorged. The tongue was dry, slightly fissured, and coated with heavy brownish fur. The face was flushed; he had sneezings and a profuse nasal discharge, which, however, was not offensive. The urine was entirely free from albumin and sugar. Towards the evening he became delirious and obstinate, and only with difficulty was kept in bed.

I prescribed with subsequent good results 1/6th grain of morphia, and it gave him some hours' rest and sleep. On Feb. 16th the patient complained of hiccough. He still had some mental obfuscation. The abdomen was distended. He had slight diarrhœa—three liquid stools during the daytime—but they were dark in colour, and not characteristic of typhoid fever, though extremely offensive. The patient had suddenly become very deaf, and the nasal discharge was muco-purulent. No spots were to be found on any part of the trunk; the spleen could not be felt, and there was no tenderness in the right iliac fossa.

As the temperature had now been steadily rising for six days and abdominal signs having become manifest, I had a "Grünbaum-Durham" (Widal) test examination of the blood made by a competent observer. The typhoid reaction was negative. I may here remark that this examination was repeated eight days later, with the same result. During the next week the progress of the illness was much the same. He continued to be delirious during the day time, and this symptom was aggravated during the night, entailing the constant care and attention of two nurses. Diarrhœa, with some attendant flatus, continued; the abdomen was still distended, but after careful and repeated examination for any rose-coloured spots none were ever discovered. Nor was the spleen enlarged, or if it were it was not sufficiently so to afford evidence thereof to palpation or percussion. He still continued to have dyspnœa and cough, and also expectorated a large quantity of tenacious mucus which was occasionally streaked, but not intimately mixed with, or stained by, blood as it is in true pneumonia. His face and lips were free from any signs of herpes.

Still the temperature curve suggested enteric fever, and his general condition certainly was that which is known as the "typhoid state." Further, a similarity to enteric fever was seen in the subsequent curve, which having remained at about 104° for two or three days gradually began to fall, until about Feb. 24th, or 14 days after the beginning of his illness, the downward line became very marked, and the thermometer registered 98·4° on Feb. 27th, the seventeenth day of his illness. When the chart was made out it was seen that the curve of the temperature was a typical "brick arch" curve, a gradual rise to a rounded top, and followed by a slightly more abrupt line of fall to the normal. But the fever had only lasted 17 days. The lung signs gradually cleared; diarrhœa ceased; the distressing tympanites and hiccough subsided, and his recovery was steady and uninterrupted. Convalescence was not marked by any untoward incident, and on the twenty-third day of his illness he was allowed, after much persuasion on his part, to sit up in his chair.

What was the true nature of this attack? What infectious disease did he, and the other similar patients, suffer from? Was it an abortive attack of typhoid fever?

Against this it may be urged that an illness quite similar in course, duration, and symptoms occurred in the spring of different years, and attacked three other elderly persons.

Now I would point out that typhoid fever in senile subjects is very rare, though not unknown. Also I would repeat that in none of the patients were any rose-coloured spots found; in all the serum reaction of typhoid fever was negative; the stools were not characteristic of that disease; the spleen was in no patient found to be enlarged; the duration of the fever was only 17 days (the shortest) or 19 days (the longest), and the distension of the abdomen was chiefly due to distension of the colon.

It can scarcely be admitted that the attack in each patient was a form of pneumonia due to some micro-organism other than Fraenkel's, though I am convinced that pneumonia may be produced by different varieties of cocci and other septic germs; and in addition I would remind my readers that ulceration of the large intestine, attended by meteorism, is not infrequent in ordinary pneumonia. On the other hand, it will be seen that the fall in the temperature was gradual and not abrupt. Again, the signs characteristic of pneumonia—viz., lividity, rusty spit, and herpes on some part of the face—were absent. It may be suggested that the attacks were really influenza, since they occurred in the spring or late winter, and that the symptoms were protean in each case; but there were no typical pains in the back and loins, nor in the eyeballs, nor in the lower thirds of the extensor surface of the thighs.

The clinical problem is therefore a difficult one, and I am inclined to fall back on the diagnosis that each patient suffered from a septic fever, probably brought about by food prepared in dirty utensils which contained some minute organism, possibly a coccus, which exerted a widespread infection, involving not only the nasopharynx and the buccal cavities, but also the Eustachian tubes which open into the former. Thence the infection extended down the respiratory tract, as well as to the gastro-intestinal canal, with the result that the patients had symptoms which might easily be mistaken for typhoid fever or for pneumonia, and the probable cause and nature of the illness overlooked.

PS.—Since the above was written Dr. Herbert A. Smith has recorded in the *West London Medical Journal* of November, 1914, a case somewhat similar to the above. But the attack only lasted eight days, and in this instance the diagnosis of influenza was probably correct.

Seymour-street, W.

EXETER CITY ASYLUM.—Dr. G. N. Bartlett was, at a special meeting of the committee of this institution, appointed medical superintendent. Dr. Bartlett had been previously at Bexley Asylum, and is at present assistant medical officer of the London County Asylum at Horton, Epsom. The salary of the post is £500 increasing to £600 per annum, and, as recently mentioned in THE LANCET, the medical superintendent will be allowed to act as a consultant upon mental cases occurring in the city of Exeter.

GLYCERINE IN BROMIDROSIS,

WITH A NOTE ON MILITARY NEEDS.

BY T. H. C. BENIANS, F.R.C.S. ENG.,
PATHOLOGIST TO THE PRINCE OF WALES'S GENERAL HOSPITAL, TOTTENHAM.

Bromidrosis is a condition of offensive sweating, usually limited to the soles of the feet. It occurs most frequently, although not entirely, during the hot months of the year, and it is well known to be highly resistant to treatment. Associated with the condition in severe cases there is usually marked tenderness of the soles, and abrasions and blisters readily form. The condition is attributed to the results of bacterial decomposition of the sweat. The whole of the influences at work in the causation of bromidrosis are not altogether clear; numerous and various bacteria are present in all cases, and probably some essential constitutional factor is in operation in addition to the bacterial infection.

Of 5 cases treated by me 3 were of a mild type associated with the warm weather. These were completely relieved whilst the treatment lasted, but relapsed when it was discontinued. The other two cases occurred in boys of 14, and were of a severe type. The condition had persisted for some months in spite of energetic measures taken to ensure cleanliness, and despite the continued application of drying and disinfectant powders. In both of these two latter cases there were blisters and abrasions, and in both cases the condition was completely cured in the course of three days by the application of glycerine well spread over the soles and toes before the socks were put on, this being repeated each morning as long as was necessary (three times in both cases).

The substances which give rise to the clinical symptoms of bromidrosis are to be regarded as products of protein disintegration, resultant on the action of bacterial enzymes. The actual substances present vary in nature and amount from time to time; among the most important are certain aromatic bodies, probably indol and perhaps skatol; these in conjunction with certain fatty acids give rise to the offensive smell, and no doubt help to aggravate the cutaneous lesions. Another and possibly the most harmful body is ammonia. This alkali, even in dilute solutions, has, as is well known, a relatively strong solvent and destructive action on keratin; and it seems probable that it is owing to its action on the skin that blisters and abrasions so readily occur in patients suffering from bromidrosis.

The addition of glycerine and various carbohydrates to the medium in which the indol-producing bacteria are growing prevents the formation of this substance. In addition, in place of an alkaline medium the fermentation of the glycerine leads to the production of a marked acidity. In treatment, then, the application of glycerine, while not inhibiting the growth of the bacteria, might be expected to prevent the formation of indol and other end products of protein destruction, and to substitute an acid for an alkaline medium in contact with the skin of the foot. This expectation was realised in my cases.

Bromidrosis as a clinical entity is probably not common in the army under normal circumstances, but even about 1 per cent. in a large army would make a considerable total of cases, which could probably be treated successfully by the method here advocated. It is, however, to a wider issue that I wish to direct attention. From time to time we hear of forced marches under conditions in which particular care of the feet, and probably even measures for securing ordinary cleanliness, are out of the question. Under these circumstances bacteria on the feet are likely to flourish, and the deleterious products of their activity to make themselves felt on the skin, with the result that blisters and abrasions readily form and have a very poor chance of healing; this, of course, especially during hot weather. It is suggested that the application of glycerine by preventing the formation of noxious products would enable the skin to be kept in a healthy condition, and for a time would do away with the necessity for washing. In practice the treatment presents no difficulty, involving as it does nothing more than the occasional application of glycerine in relatively very small quantity. I think that the use of glycerine should have advantages over the rather opposite measures often adopted, designed to dry and harden the skin of the feet. One effect of the glycerine, of course, is to make the skin moist; that does not, however, mean that the horny outer covering, which is the true protective layer, has been softened. On the contrary, whilst retaining its protective qualities, the skin is rendered supple, and it would seem fair to argue, as in the case of a material such as leather, that a supple and pliant fabric will wear better than a hard and brittle one. This last point, however, is a matter for experiment, and no doubt some other substance acting on the same principle could be substituted for glycerine if it seemed advisable.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OTOLOGY.

Introductory Address.—Exhibition of Cases and Specimens.

A MEETING of this section was held on Nov. 20th, Dr. ALBERT GRAY (Glasgow), the President, being in the chair.

The PRESIDENT, in the course of a brief Introductory Address, gave a review of otology and its relationship to bacteriology and the wider subject of pathology. The problems already solved by otology were very great; 20 or 30 years ago but little could be done for a case of suppuration of the middle ear in staving off the ultimate fate of the patient; yet now these cases were successfully treated, either by operation or without. The number of lives saved and the amount of restoration, or at least of improvement, of hearing gave much hope for the future. But there were problems met with in the specialty which remained misty, and that more progress had not been made in their solution was probably due to the discoveries of Pasteur and Lister having so concentrated the attention of pathologists upon micro-organisms and their part in disease that too little attention had been given to the tissues themselves. Yet so widely different were the tissues of various people that even when the degree of invasion of organisms was equal in a number of patients the amount of response was not equal, nor could it be accurately forecast. Disease was the response of the animal to injury, and however plentiful the bacteria there could be no disease without the animal to manifest it. When a certain agency was at work in the human body the response was given a definite name, but it was never the same disease, exactly the same in behaviour. The individual was therefore by far the more important factor, the external factor the less important. Some disabilities were inherited, and no sort of outside influence could produce them; an instance of this was Daltonism or colour-blindness. A less noticeable case was that of arterio-sclerosis, with which could be classed otosclerosis. Some people, however outrageous their lives over a long series of years, enjoyed a green old age without suffering from arterio-sclerosis, while others had it in comparative youth. It seemed as if the initial defect was so strong in the fertilised ovum that it would come to light whatever the conditions of life. In many cases of otosclerosis the exciting agent was such a disease as typhoid fever, prolonged anæmia; even pregnancy might determine its onset. And though the Mendelian law was doubtless true of plant characters and of such inherited qualities as night-blindness, it did not apply to such a condition as arterio-sclerosis, nor, according to Mott's observations, to the neuroses. And probably the reason was that these latter depended largely on the process of repair being deflected from its normal function, such as by the influence of lead or other poison, and this complication by an outside influence naturally prevented it conforming to a law based upon pure heredity. Even in malignant disease there was a certain amount of inherited tendency, but an accident would largely determine the site and time of the manifestation. Knowledge was now fairly definite as to how repair of tissue took place, but he had never yet seen or heard the question propounded, "*Why* does tissue heal?" Why did not a wound granulate at the edges and remain open instead of closing? The answer to this question would mark a great advance and open the way to the solution of many problems.

Mr. W. M. MOLLISON showed the Brain of a patient who was exhibited at the section last year, he having died some weeks after the operation. The tumour, a glioma, was found in the position assigned to it during life—namely, about the left cerebello-pontine angle. There was an extensive hæmorrhage into the growth, and on one side was a cystic cavity which was opened at the operation.—Mr. C. E. WEST said it was a class of case difficult to diagnose, and presenting a very formidable problem in treatment. He thought the collection of fluid simulating a cyst was cerebro-spinal fluid. He did not think the exhaustion of the patient was due to the loss of cerebro-spinal fluid, for, provided patients were given plenty of fluid, they could stand the withdrawal of quite large quantities of cerebro-spinal fluid. And there was no evidence in the brain of infection of meninges, such as Mr. Mollison feared might have occurred.—Mr. G. J. JENKINS also discussed the case, and Mr. MOLLISON replied.

Dr. V. H. WYATT WINGRAVE exhibited a series of slides illustrating Lumbar Puncture Fluid in Aural Cases, and in his demonstration of them pointed out that in cases which were probably acute exacerbations of old and long-standing trouble the bacteria were nearly always polymicrobic, so varied as almost to present the characters of a throat film. In acute cases there were generally plenty of bacteria, but usually only of one or two varieties, the most interesting being the bacillus capsulatus mucosus. The cerebro-spinal fluid, especially in ear work, might be quite clear at the first or second withdrawal, but subsequent ones were either cloudy or full of flakes. In most cases of severe middle-ear infection the normal alkaline reaction of the fluid was much reduced, or it might even become acid. This had an important bearing on the treatment by urotropine.

Mr. WEST showed a male patient, aged 69, upon whom he had operated for Carcinoma of the Pinna. On admission to hospital he had a large ulcerated septic growth involving the inner aspect of the tragus, the external meatus, and the concha on the left side. The tissues on the posterior aspect of the pinna and over the mastoid region were œdematous and brawny, and one or two small glands could be felt in the upper part of the anterior triangle of the neck. The extensive operation included a radical mastoid, with wide exposure of dura mater above, and removal of neighbouring lymphatic territory. A graft was afterwards applied. The specimen was exhibited.—Mr. JENKINS and the PRESIDENT discussed the case, and Mr. WEST replied.

Dr. DUNDAS GRANT exhibited and demonstrated a Cold-air Labyrinth-testing Apparatus, which consists of a metal tube covered with an absorbent linen webbing and coiled in the form of a hollow cone. The absorbent covering is well wetted with chloride of ethyl, and air is projected through the tube by means of ordinary spray bellows. Inflation is continued until nystagmus is, or ought to be, induced—a period of some 30 seconds. The temperature of the air was about

44° F.—Mr. E. D. Davis thought the apparatus could be modified for the use of hot air also.—Mr. J. F. O'Malley thought the instrument possessed advantages over Barany's, because with the latter vaporised ether was employed, and it was not always desirable to introduce a drug.

SECTION OF DERMATOLOGY.

Exhibition of Cases.

A meeting of this section was held on Nov. 19th, Dr. J. J. Pringle, the President, being in the chair, when the following cases were exhibited.

Dr. P. S. Abraham: A case of Lupus Pernio on the hands and ears of a young Belgian with a family and personal history of tuberculosis.—The President regarded it as a typical example of the condition as first described by Sir Jonathan Hutchinson in this country and afterwards by Besnier and others on the Continent.—Dr. H. G. Adamson and Dr. J. H. Sequeira agreed with the diagnosis, the former suggesting X ray treatment and the latter static electricity for the relief of the chilblain circulation.

Dr. J. M. H. MacLeod: A case of an unusual Soft Nævus on the head of a young child.—Dr. A. Whitfield said he had no doubt that it was a soft mole, and remarked how readily a history of maternal impression could be obtained in these cases.—Dr. Sequeira had seen a similar case associated with the presence of a coloboma on the same side.—Dr. Adamson thought a section would show the growth to be a verrucose linear nævus.—Dr. E. G. Graham Little and Dr. Abraham also contributed to the discussion.

Dr. S. E. Dore: A case of Lichen Spinulosus in a child aged 8 years, following an attack of pneumonia.—The President said the condition did not appear to be fully known to French dermatologists, by whom it was apparently confused with spiny tuberculides. He agreed that there was no evidence of tuberculosis in the present case.—Dr. Adamson remarked that it was sometimes difficult to distinguish lichen scrofulosorum from lichen spinulosus, but he did not consider the case shown as tuberculous. He regarded it as related to lichen planus, and thought that lichen spinulosus in an adult meant that the patient had had, or would have, lichen planus.—Dr. Whitfield agreed with the exhibitor that external irritation might give rise to the over-production of horny tissue. Spines might be produced in connexion with seborrhœic eczema, lichen planus, syphilides, and in tuberculides.—Dr. Graham Little thought the microscopical appearances of the papules resembled those of pityriasis rubra pilaris rather than those of lichen planus.

Dr. W. K. Sibley: A case of Psoriasis associated with Extreme Onychogryphosis of the Toe-nails.—The President had never seen a similar case of the associated occurrence of the two diseases, but thought the toe-nail condition might be an exaggerated degree of the psoriasis, which affected the subungual fold of the finger-nails in the usual characteristic fashion.—Dr. G. Pernet had not seen the toe-nail condition in so young a patient nor its association with psoriasis.—Dr. Whitfield suggested that creasote internally might be tried as he had found it of great value in severe cases of psoriasis.—Dr. A. Eddowes, Mr. H. C. Samuel, and Mr. W. J. Midelton further discussed the case.

Dr. Sequeira: A case of Lichen Plano-Pilaris.—The President said the case was the most severe and extensive example of the disease he had seen, but it was absolutely characteristic.—Dr. Little, Dr. Adamson, Dr. Whitfield, Dr. Pernet, Dr. Eddowes, and the President discussed the relationship between the elementary lesions of lichen spinulosus, lichen planus, and pityriasis rubra pilaris.

Dr. Eddowes: A case of Rodent Ulcer of the Right Lower Eye-lid.—Dr. MacLeod advocated the use of radium as the best method of treatment of rodent ulcer in this position; he had used carbon-dioxide snow in a considerable number of cases, but had never had a permanently successful result from it.—Dr. Graham Little said he had observed a series of cases in which snow had proved successful.—Dr. Whitfield and Dr. Pernet agreed that CO_2 snow was unsatisfactory.—Dr. Sibley thought that snow should be followed up by X rays.—The President and Dr. Sequeira supported Dr. MacLeod's views.

Dr. Graham Little: 1. A case of Papulo-Necrotic Tuberculide. 2. A case of ? Dermatitis Repens which the President said he regarded as a typical one of lupus modified by treatment, and Dr. Adamson and Dr. Dore concurred in that view.

Dr. A. Winkelried Williams: A case of Leprosy treated with benefit by a vaccine prepared from the patient's own lesions.—Dr. Graham Little had seen improvement take place in a patient treated in a similar manner at St. Mary's Hospital.—Dr. Pernet and Dr. Sequeira also spoke.

SUBSECTION OF PROCTOLOGY.

Exhibition of Cases.—Injury to the Bowel from Shell and Bullet Wounds.

A meeting of this section was held on Nov. 11th, Mr. F. Swinford Edwards, the President, being in the chair.

Mr. Aslett Baldwin showed a woman, aged 76½, upon whom he had performed an Abdomino-perineal Excision of the Rectum.

Mr. Ivor Back described an obscure case of Œdema of the Sigmoid Mesocolon in which at operation the sigmoid lay in a groove in the intensely œdematous mesocolon. He invited suggestions as to the pathology of the condition.

Mr. W. Sampson Handley showed a case of apparently inoperable Carcinoma of the Rectum which became operable under radium treatment. The patient had remained free from recurrence up to the present, a period of about a year.

Mr. J. P. Lockhart Mummery read a paper on Injury to the Bowel from Shell and Bullet Wounds, in which he entered a strong plea for the expectant and conservative treatment of those injuries. He remarked that the most difficult cases were associated with fracture of the pelvis and sepsis, and described a case where a fæcal fistula opened by a traumatic aperture through the ilium. The hole in the bowel was closed by suture, and recovery was complete. For such cases he considered, in general, temporary transverse colostomy advisable.

A discussion followed, in which the President and others joined.

Æsculapian Society.—A meeting of this society was held on Nov. 20th, Dr. David Ross, a past President, being in the chair.—Dr. Leonard Williams conducted a clinical afternoon and showed: 1. A girl, aged 19 years, with Goitre, the right side being cystic. She also had exophthalmos and high arched palate. There was no heart trouble or other evidence of Graves's disease. Her eyebrows and hair generally were normal, but the mammary glands were infantile. The exophthalmos, it was pointed out, was due to adrenal insufficiency. Simple cystic goitre without hypertrophy. Treatment consisted of small doses of thyroid extract under observation. 2. Enlarged Thyroid of two years' standing in a woman, aged 29, who looked over 40 years of age, her hair being quite grey and her breasts flat, instead of being hard and round as in Graves's disease. The condition was due probably to toxæmia arising in the mouth or intestines. Short-circuiting had proved successful in two or three such cases.—Dr. P. Hamill showed: 1. A man, aged 43 years, with Double Cervical Ribs and Wasting of Forearm and Hand of recent onset. The condition was improving under electric treatment. 2. Skiagrams of this and other cases.—Dr. Leslie Durno mentioned a case of a woman, aged 45 years, who suffered from cough; phthisis was suspected. On examination it was found that the patient had a dark fluid discharge from the vagina. Swellings were found above the pubis on both sides, that on the left being hard and that on the right soft. Fibroid was diagnosed and an operation was performed. The soft swelling was found to be a cystic ovary and was removed. The point in the case was that the patient had no finger or toe nails for some time before, but they were entirely restored three weeks after removal of the ovaries.—Dr. Williams suggested that the removal of the ovaries stimulated the thyroid to increased activity.

Hunterian Society.—A demonstration of skin diseases was given at the London Hospital on Nov. 25th. Dr. J. H. Sequeira showed the following cases: 1. Herpes Zoster in an infant aged 6 months. 2. Lichen Planus, which had started as an acute erythema. 3. A Syphilitic Tongue in a girl who had a primary scar on the face acquired at the age of 10 months. 4. A case of very deep Gummatous Ulceration and Bone Necrosis of the Face, showing the excellent results of salvarsan, followed by plastic operations. 5. A case of Terminal Necrosis of the Phalanges. 6. Multiple Leiomyomata of one side of the face and the other side of the neck. These were congenital and yielded to electrolytic treatment. 7. Epidermolysis Bullosa. 8. A case of

Gummata in a young congenital syphilitic, which were being treated by salvarsan suppositories. 0·1 grm. salvarsan was given daily for three days, and the course repeated after a few days' interval. It was thought that absorption of the drug through the portal circulation might lead to its being especially activated in the liver. It was too early to say much, but the results so far were encouraging. 9. A case of Exfoliative Dermatitis following Psoriasis.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—A meeting of this association was held in the rooms of the Medical Society of London on Nov. 24th, Dr. David G. Thomson, the President, being in the chair.—The following resolution, having been passed by the council, was submitted to the general meeting and approved unanimously:—

> The council of the Medico-Psychological Association of Great Britain and Ireland direct the attention of the association to the hardships of the staffs of the Royal Asylums of Scotland, which are not included under the benefits of the Asylum Officers' Superannuation Act, and recommend that letters be written to the managers of the Royal Asylums, the Scottish Board of Control, and Sir John Jardine on the subject.

The question of holding the regular meetings of the association during the continuance of the war was then discussed. The council recommended that they should be held, but that the projected visit to Birmingham in February next be abandoned for the present and the meeting held in London without any festivities. This was agreed to.—It was announced that Dr. C. E. Hetherington, superintendent of the asylum at Londonderry, had been seriously assaulted and wounded by a patient, but it was hoped that the wound was not dangerous. Sympathy with Dr. Hetherington was expressed.—The meeting agreed to send a letter of condolence to the relatives of Mr. Sydney Nelson Crowther, superintendent of Netherne Asylum, who had enlisted as a motor-cyclist scout and was killed in action recently. A similar course was pursued in the case of the late Dr. Harold B. Shaw, of the Isle of Wight Asylum, who died after a short illness.—The President asked whether any member could give any information regarding the fate of Belgian asylums during the devastation of which that country had lately been the victim, but no information was forthcoming.

Reviews and Notices of Books.

Report on the English Birth-rate. Part I.: England North of the Humber.

By ETHEL M. ELDERTON, Galton Fellow of the University of London. London: Dulau and Co. 1914. Pp. 246. Price 9*s*.

THIS elaborate report, involving a large statistical collection of facts, treats of the changes that have occurred in the birth-rate of the districts specified in the title during the period between the years 1851 and 1906. It claims to have established definitely (1) that an immense fall in the birth-rate took place between 1876 and 1906; and (2) that this fall was due, not to any physiological decrease in fertility, but to a widespread and nearly universal artificial restriction of the family.

In view of the great and rapid decline of the birth-rate which, although previously recognised, has now been so clearly demonstrated by the author of this report as having taken place in the districts named since about the year 1876, it seems clear that some factor other than purely physiological must be sought for in endeavouring to find an explanation. It is indeed an already wide-spread opinion that, especially among the classes ranging from above a low "poverty" line to a high level of wealth, the notable decrease in the birth-rate in late years is mainly the result of the use of "preventives" to conception. It is true, however, that this opinion, though very generally held, is but an opinion, and has never been set forth with any such degree of cogency or supported by such relevant observations as are now furnished in the report before us. Weighty and interesting evidence is there set forth of the wide sale of "preventives" in these later years; and very significant stress is laid on the synchronism of the initial fall of the birth-rate with the active propagandism for the limitation of families pursued by Mr. Bradlaugh and Mrs. Besant and the failure of the prosecution to convict them for publishing their well-known work entitled "The Fruits of Philosophy." It may be admitted, indeed, that artificial prevention of conception is probably a very important factor at the present time in limiting the size of families, and that it contributed largely towards producing the special fall of the birth-rate under consideration. But, for all this, demonstration of the claim made that artificial prevention is the sole cause to be reckoned with is still to seek.

The aim of this work appears to be to show that physiological decrease in fertility has nothing, while artificial restriction has everything, to do with the decrease of the birth-rate; and, further, that artificial restriction is practised on the whole by the more "fit" members of the population, or such as are assumed to be "naturally" the better stocks. Thus the argument running through the report apparently postulates that the cause of the decline in the birth-rate must be *either* natural *or* artificial, and seeks to establish the latter largely by means of an attempt to exclude the former. And here it may be remarked that we are not aware of any body of opinion on this subject, such as is described in the introduction to this report, which excludes from its purview the probable factor of artificial prevention, and regards the fall in the birth-rate as wholly a natural process.

This attempt to exclude the physiological factor altogether and to leave the artificial one in sole possession of the field cannot be deemed convincing. The author does not seem to recognise the probable direct influence on many women of sustained expenditure of energy or of bodily labour in decreasing their fecundity; or that many women, already the subjects of ailments which in themselves tend to prevent or diminish fecundity, use preventives in dread of future pregnancies or of any pregnancy at all. The possible physiological and medical questions thus involved are lightly dismissed with the statement that "there is absence of evidence that higher wages, the pursuit of pleasure, and an increased luxury have produced partial sterility." There is a very considerable amount of evidence on this subject, drawn from the study both of man and other animals, which has been altogether ignored. It seems to us that no attempt to exclude, by such statistical methods as are followed in this paper, all the factors possibly involved in the study of the causes of the decline of the birth-rate is likely to be successful.

Exception again must be taken to the indefinite and erroneous use of the words "fit" and "fitter" in this report, a use which occurs in many other works dealing with human reproduction and sociological matters generally. These words are not used in the legitimate sense—i.e., the biological or so-called "Darwinian sense"—and, to say the least, they are used arbitrarily and ambiguously. The epithet "fit" or "fitter" is apparently applied to certain persons or classes who are more or less socially worthy in the opinion of the author; and the argument is that it is the "worse" stocks which are left to breed freely, while the "better" stocks are reduced in number by artificial restrictions.

But when the chosen standard, such as that of being well-housed, &c., by which betterness or "fitness" is measured, seems somewhat failing, recourse is had to the still vaguer standard, based on collected opinions, of "good health and habits," which are assumed to be "hereditary" qualities. Now although it may well be true that the use of "preventives" exerts its greatest restrictive influence on the birth-rate among the more prosperous and thrifty classes, there is no reason to accept the view that the actually more fertile classes are "naturally" or racially the worse classes.

Although in most places of this work the word "fitter" seems to stand for persons situated in more or less good social conditions, and thus assumed to be physiologically sounder and racially or hereditarily better, in one place (see footnote, p. 232 of report) it is stated that "if healthy parenthood is to any degree hereditary its limitation will destroy the action of reproductive selection—i.e., the survival in larger numbers of the more *fertile* stocks." Here it seems to be the more fertile stocks which are indicated as the "fitter." But it is nowhere shown that the socially "better" have ever been more fertile than the classes who are alleged to be the "less fit," and to have now the preponderance in the numbers of their families.

Full of highly interesting information as this able report undoubtedly is, and clearly as it has shown the probably great importance of preventive measures as a factor in the reduction of the birth-rate, it fails, according to our judgment, in its claim to have eliminated, by the method of exclusion which it follows, the material part that is probably played in this reduction by various physiological and pathological influences.

Die Vitale Karminspeicherung: ein Beitrag zur Lehre von der Vitalen Färbung, mit besonderer Berücksichtigung der Zelldifferenzierungen im entzündeten Gewebe.

Von Dr. K. KIYONO, Kioto (Japan). Mit 5 lithographischen Tafeln. Mit einem Vorwort von L. ASCHOFF. Jena: Gustav Fischer. 1914. Pp. 258. Price 16 marks.

THE "vital staining" of cells is no new process. As early as 1878 R. Heidenhain used sulphindigotate of soda in the investigation of the structure of cells. Later Ehrlich employed methylene blue, and as a matter of fact "vital staining"—that is, staining "*intra-vitam*"—has considerably increased our knowledge of minute structure, more especially as regards the liver and kidney, while Goldmann[1] and others, by using trypan blue and trypan red, still further advanced our knowledge and demonstrated the value of the method both for normal and pathological processes.

The method employed by the author was to inject into any convenient vein of rabbit, fowl, or other animal a watery solution of carmine dissolved in lithium carbonate. The injection was repeated at varying intervals and storage of the carmine particles in the several tissues investigated at varying periods after the injections. Intraperitoneal and subcutaneous injections were also used. The tissues were fixed in alcohol or formol. First, the general effects and the degree of storage in the several organs of normal animals were studied, beginning with the kidney, which was recently investigated by Ribbert, Aschoff, Suzuki, and others. The method showed that the renal tubule is even more complex than was surmised. The liver became red, and on investigation the protoplasm of the liver cells and the star cells of Kupfer was found to be loaded with carmine granules, while the epithelium of the bile-ducts was completely uncoloured. The brain and cord remained "snow white," while the pia mater and choroid plexus became red. In the lymphatic apparatus there was a granular colouration of the reticular endothelium, and also of the "histiocytic" macrophages, which are derivatives of the former. The lymphocytes and germinal centres were not coloured. The granules did not pass into the fœtus though the placenta itself was red. Special attention was given to the presence or absence of carmine granules in connective tissue, both in the normal condition and in inflammation—the fibroblasts always contained the pigment. The omentum was specially studied, as were its lymphocytes, plasma cells, clasmatocytes, and fibroblasts. The endothelium itself covering it stored up very fine carmine granules. The cell forms in serous fluids were next investigated. The behaviour of cells towards carmine during regeneration of the spleen, liver, and lymphatic tissue was also investigated, as were tumours and tuberculosis.

The method proved itself a successful adjuvant for pathologico-histological diagnosis. The special results obtained with the kidney, liver, suprarenals, and other organs are described and figured. The results as regards the epithelium of the skin and mucous membranes were negative, and carmine did not appear in the bile. The endothelium of serous membranes is coloured, while the endothelium of blood-vessels is but slightly affected. The cells, even during proliferation and mitosis, do not lose their granules. In tumours produced experimentally in fowls and mice the sarcoma cells of the former and the interstitial cells of the latter show granular depositions, very like those of the fibroblasts from which they are derived. In the corresponding cells of carcinoma no carmine granules were found.

This is an admirable piece of work, which continues and enlarges a subject which has already been so successfully worked at under the direction of Professor L. Aschoff in Freiburg i.B.[2] The plates show a very high degree of excellence.

British Rainfall, 1913.

Compiled under the direction of H. R. MILL, Director of the British Rainfall Organisation, by R. C. MOSSMAN and C. SALTER. With maps and illustrations. London: Edward Stanford. 1914. Pp. 476. Price 10*s*.

THE fifty-third volume of this invaluable work contains the records received from 5370 stations, an increase of 98 over the previous year. The general plan and scope remain the same as in former years, and it would be difficult to suggest any improvement; the regional maps that are now supplied add much to its interest. The mean rainfall for England in 1913 was 31·08 inches, being 4 per cent. below the average of the 35 years, 1875–1909; in Wales it was 51·47 inches, or 9 per cent. above the average; in Scotland there fell 42·67 inches and in Ireland 43·06 inches, these amounts being respectively 4 per cent. below and 7 per cent. above the average. The regular recurrence of two relatively dry years following or followed by a wet year was interfered with in 1910, when one wet year succeeded another, but the cycle again recurred in 1912 with a wet year, and we learn that "with a slight deficiency in general rainfall the year 1913 again conforms to the rule, although it would be premature to assert that the periodicity has been re-established. The periodicity applies to England and Wales, but not to the British Isles, as is inadvertently stated on p. 209. The greatest rainfall in the kingdom occurred at Loan, Loch Quoich (Inverness-shire), where 183·25 inches were recorded. In England, 165·44 inches fell at The Stye, near Scafell Pikes, Cumberland; in Wales, 167 inches were recorded at Crib Goch, on Snowdon; and in Ireland, 103·60 inches at Gearahameen, in the Gap of Dunloe. The least rainfall occurred at Crowle, Lincolnshire, where only 16·67 inches were registered. A special article by Mr. Mossman deals with the phenomena of the dry summer of 1913. During the months of July and August barometric pressure was above the average over the whole kingdom, and, contrary to ordinary experience, was highest off the west of Ireland and lowest over the North Sea. Temperature was below the average everywhere except in the south-west of England, the extreme south of Ireland, and in the central and western Highlands and extreme north of Scotland. Sunshine was very deficient throughout nearly the whole of England and Wales and the east of Scotland. Rainfall was below the average everywhere, except in a small area in Sussex, and for the greater part of the kingdom was less than half the average amount. The memoir of the late Sir John Murray, editor of the 50 monumental volumes of the "Challenger" report, is appreciative and interesting; it is written by Dr. R. H. Mill, honorary director of the British Rainfall Association, the general editor of the publication. It is regrettable that the British Rainfall Organisation is not more adequately supported. The expenditure of £1469 was not met by the receipts, a deficiency of £56 having to be made up by the honorary director. Municipal corporations and sanitary authorities would be well advised to give material aid to its work, which is of great value in relation to many matters of public health administration. We are glad to learn that Dr. Mill has returned from his six months' visit to New Zealand in better health.

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[1] THE LANCET, August 23rd, 1913, p. 595.

[2] In this connexion see review in THE LANCET, May 17th, 1913, p. 1392, of somewhat similar work by T. Suzuki, "Zur Morphologie der Nierensekretion unter Physiologischen und Pathologischen Bedingungen."

Lehrbuch der ärztlichen Sachverständigen-Tätigkeit für die Unfall-, Invaliden-, Hinterbliebenen-, und Angestellten-Versicherungs-Geszetzgebung.

Bearbeitet von Dr. L. BECKER, Geh. Medizinalrat und K. Kreisarzt a. D., Gerichtsarzt b. O. Gross-Berlin. Seventh edition. Berlin: R. Schoetz. 1914. Pp. 628. Price, paper, 15 marks; bound, 16.50 marks.

FOR unconscionable titles no books come up to German books; this work would run little chance of misinterpretation if summarily entitled "Medicine and State Insurance." It deals with the social insurance laws of Germany as they have developed, from their origin in the "Insurance against Sickness" Act, dated June 15th, 1883, down to the six books and 1805 paragraphs of the "Reichsversicherungsordnung" of 1911. Dr. Becker says that about 27 million persons were insured by the State against accident in 1912, and that payments amounting to over 170 million marks were made to 1,168,403 insured persons or their dependents during the year. The insurance of workmen gave rise to arbitration (legal proceedings) in 117,805 cases during 1912.

Dr. Becker's book is divided into two sections. The first deals mainly with the legal aspect of State insurance in Germany, and extends to 111 pages. The second part is devoted to the various diseases or accidents that may affect different parts of the human body, the ways in which they may be distinguished from apparently similar conditions, the extent to which current legal practice awards their victims compensation, the principles upon which such compensation is awarded. Thus it appears that workmen who receive injuries in the neighbourhood of the spleen or elsewhere, injuries to bones, or who lose much blood, and afterwards develop leukæmia (generally of the myeloid type), may be said to be suffering from "traumatic leukæmia" and may receive full compensation. It has been held in the German courts that a fatal secondary "traumatic meningitis" may occur 7 weeks, 15 months, or even 30 months after an injury to the head; chronic myocarditis has been attributed to falls without any direct injury of the heart. The last 70 pages are occupied by considerations on the laws dealing with the insurance and payment of invalids, employees, and the survivors of employees in a general way. The book ends with a good index.

The fact that Dr. Becker's compendium has reached its seventh edition is proof enough of its excellence; from the medical point of view it is full of interesting and important information on the many subjects with which it deals. It must be of great value to all medical referees and to medical experts who have to face lawyers, and should find a place in all medical libraries.

Outlines of Biology.

By ARTHUR THOMSON, LL.D. Sixth edition. London: Henry Frowde and Hodder and Stoughton. 1914. Pp. 855. Price 12*s*. 6*d*. net.

THAT this handbook should have reached a sixth edition is strong evidence of its merits, for the field which it covers has been of late years abundantly cultivated. Professor Thomson has had no lack of competitors in his most praiseworthy desire to lay before the commencing student a general view of the facts and inferences of zoology. One of the features which have secured to the author the pleasure, and we hope the profit, of having arrived at a sixth edition is undoubtedly the trustworthiness of his statements of fact. Because it is so absurdly easy to falter, even in quite well-known anatomical details, for the most experienced of teachers (as others besides the author will most readily admit), Professor Thomson is to be particularly congratulated on the firm hold which he has been here shown to possess of the main facts of zoology. We have in more than one group looked very carefully for error, not in the least to triumph over the author, but to assist him in the production of an especially superior seventh edition. This search has only revealed trifling misstatements which are obviously *lapsus calami*. Thus we may point out that Professor Thomson, though nearly exact in his statement that the Platyhelminths agree in possessing no anus, is to be confronted with Odhner's discovery of a distinct anus in the trematode genus Haplocladus. Again, the proper name of the anaconda is not "Boa" but Eunectes murina. Finally, it is not absolutely, though very nearly, correct to say that "all tapeworms are hermaphrodite," since the genus Diœcocestus, as its name implies, is bisexual.

Les Maladies du Cœur et de l'Aorte et leur Traitement.

By Dr. ARTHUR LECLERCQ. Paris: Octave Doin et Fils. 1914. Pp. 552. Price 7 francs.

IN this work, which forms one of a series on "Les Maladies de la Cinquantaine," the author offers a good résumé of the modern methods and views concerning the study of diseases of the vascular system. In his introductory chapters on the abnormal heart he describes the modern methods of investigation of organic and functional disturbances.

A new feature, however, is the classification of the diseases of the heart with which the author expects to replace the older and inadequate arrangement. He would divide the diseases of this system into three great syndromes—cardio-sclerosis, cardio-arteritis, cardio-atheroma, and again aortic sclerosis, aortitis, and aortic atheroma—which classification he bases upon the etiological factors together with the clinical features. Nevertheless, he gives a readable and accurate account of the diseases according to the old nomenclature, though it is a little difficult to find these in his table of contents based upon this new plan. Some of his treatment is likewise novel, and what he calls rational. He holds that all methods of treatment should be directed towards combating the retention of water or urea or salt, and in fighting against the renal inadequacy. But under treatment he details the various cures, hygienic and dietetic, that are in use.

We consider that this book will well repay study in virtue of the simplicity of its language and the novelty of some of the ideas.

LIBRARY TABLE.

The Intensive Treatment of Syphilis and Locomotor Ataxia by Aachen Methods. By REGINALD H. HAYES, M.R.C.S.Eng., &c. London: Baillière, Tindall, and Cox. 1914. Pp. 64. Price 3*s.* 6*d.* net.—Almost all advocates of salvarsan agree now that mercury is a most useful adjunct or even a necessary addition to the treatment by "606," and many with much experience in the treatment of syphilis declare that mercury surpasses its more recent competitor in trustworthiness. Of all the methods of administering mercury none is more effective than that associated with the name of Aix-la-Chapelle, and no better exposition of the method as practised there can be found than that contained in this little work. The method is fully described, and this book should be especially useful at a time when it is not possible, owing to the war, to send patients to Aachen.

Practical Bandaging, including Adhesive and Plaster-of-Paris Dressings. By ELDRIDGE L. ELIASON, M.D., Assistant Surgeon, University of Pennsylvania Hospital, &c. With 155 original drawings and photographs. London and Philadelphia: J. B. Lippincott Company. Pp. 124. Price 6*s.* net.—This is a lavishly illustrated manual, written for students and nurses in a simple and non-technical manner. Every conceivable bandage is separately and fully described, and (in nearly every case) illustrated. The subject is divided under the five heads of roller bandages, miscellaneous bandages, elastic bandages, adhesive dressings, and plaster-of-Paris bandages. The figures, many of them from photographs, are extremely clear. No one could desire a better handbook either for learning or for reference. The price may limit its circulation amongst students and nurses, at any rate in this country.

MISCELLANEOUS VOLUMES.

Mr. Joseph Jacobs, in a charming introduction to *Old French Romances, Done into English* by WILLIAM MORRIS (New edition. London: George Allen and Co., Limited. 1914. Pp. 180. Price 2*s.* 6*d.* net), tells us that the unquestioning, if somewhat external, piety, the immutability of the caste system, the spirit of adventure, the frankly physical love of woman, the large child-like wonder, are of the essence of romance. These qualities are certainly present in the four representative stories in this volume. The stories are the Tale of King Coustans and the Emperor, the Friendship of Amis and Amile, the Tale of King Florus and the Fair Jehane, and the History of Oversea. The quaintness of diction of the Romance tongue was reconstructed in English with remarkable fidelity by the late William Morris, and the stories glow with the mellow aura of their age and clime.——In MAXIM GORKY'S *Tales of Two Countries* (London: T. Werner Laurie, Limited. Pp. 243. Price 6*s.* net) the two countries are Italy and Russia, and the majority are infused with that sadness mingled with laughter which is characteristic of Russian art. Of the Italian tales the most striking are, to our mind, "The Simplon" and "The Traitor's Mother," while "A Message from the Sea" is a forcible picture of the Italian sea-coast and its scenery. Of the Russian tales perhaps the best is the cynical tale called "Hard to Please." Most of the stories are very slight in construction.——The author of "Elizabeth and Her German Garden" has depicted for us in *The Pastor's Wife* (London: Smith, Elder, and Co. 1914. Pp. 484. Price 6*s.* net) a book worth reading at the present juncture for the glimpse that it gives of certain phases of German village life. It is written in the clever author's best style. Particularly as the daughter of an English Bishop, the pastor's wife is an improbable person in real life, but she makes an admirable foil to the character of the German pastor who regards his wife as a physiological machine for the manufacture of babies and is concerned far more with plant fertilisers than with the duties of his cloth.

Several other novels are before us. A very clever, but mentally warped medical man, in MARY KERNAHAN'S novel, *Dr. Ivor's Wife* (London: George Allen and Co., Limited. 1914. Pp. 375. Price 6*s.* net), enters into a simply formal marriage with a poor schoolmistress in the country town in which he practises, to fulfil the terms of a will whereby the testatrix, an aunt of the doctor and a friend of the schoolmistress, leaves her money to him contingent upon this marriage taking place. In this novel a considerable acquaintance is shown with the *vie intime* of the practitioner of medicine. The story develops naturally, and we will not spoil the reader's pleasure by hinting at the upshot. The doctor is painted at the outset in what seem to us unnecessarily repellent colours, but his wife is a good portrait study.——*One Man's Way*, by EVELYN DICKINSON (London: George Allen and Co. 1914. Pp. 348. Price 6*s.* net), is the tale of an accomplished young medical man whose elemental passions, buried for a while in a Devonshire village, break loose under the demoralising influence of a half-French degenerate, the guest of his placid wife. Love as felt by the savage and by the higher products of human evolution is shown in contrast, and very decently shown. The medical colour suggests considerable acquaintance with facts.——*A Daughter of Debate*, by Mrs. AMBROSE HARDING (London: T. Werner Laurie, Limited. 1914. Pp. 343. Price 6*s.* net), deals with a social problem—that presented by the relations which should exist between white and negro races.——In the 16 little stories collected under the title of *Lovers' Meetings*, and written by KATHERINE TYNAN (London: T. Werner Laurie, Limited. 1914. Pp. 314. Price 6*s.* net), love is by no means restricted to the emotion of the sexes. Mother love and the affection engendered by early association with institutions also come under the term as used by the author, who shows an intimate knowledge of human character, and depicts it simply and sympathetically with humour and pathos.——*Queer Stories from Truth* (Twentieth Series. London: *Truth* Office. Pp. 252. Price 1*s.*) are now too well known to require more than the briefest mention. The present series, consisting of 28 stories, is up to the usual good standard.——The monosyllabic title *Strike*, which Mr. FREDERICK WATSON has given to "A Story in Dialogue" (London: Lynwood and Co. 1914. Pp. 166. Price 1*s.* net), is apparently intended to have a double meaning. The story, which uses a strike of workmen as a peg upon which to hang a diatribe on social unrest and the position of women, is not particularly entertaining, and stories, *quâ* stories, should certainly possess that attribute. As an argument it is not convincing.

JOURNALS AND MAGAZINES.

British Journal of Inebriety.—In the new quarterly number Mr. J. W. Astley Cooper discusses the Proposed Legislation for Inebriates, his contention being that, while changes in the law are urgently needed to bring the inebriate under control, those persons under whose care the patient has been placed should be thereafter empowered to exercise their authority with as few rules and regulations as possible. Mr. Cooper gives a qualified approval from this point of view to the amending Bill recently before Parliament, but considers that its provisions still show too much deference to prejudices in favour of the liberty of the subject.—Dr. T. Claye Shaw, in a brief paper on the Alcohol Problem of To-day, points to the gratifying increase of temperance in the masses of the population, and urges counsels of reasonableness and moderation on the over-zealous advocates of total abstinence, with whose principles, however, he expresses his personal agreement on scientific grounds.—An article by Mr. Theodore Neild on Chronic Alcoholism and Reproduction summarises (from a review by Dr. R. Wlassak) the results of the very important researches of Dr. Bertholet, of Lausanne, into the effect of chronic intoxication by alcohol on the reproductive glands. Bertholet's inquiry dealt with the pathological conditions found in a series of 163 "drinkers" (i.e., persons habitually consuming more than 100 c.c. of pure alcohol) and in a series of 100 "non-drinkers." The most important fact established by the inquiry is that testicular degeneration is by far the most frequent morbid condition which the bodies of inebriates show. It was present in 86 per cent. of the "drinkers," as against 29 per cent. of the "non-drinkers." This result is the more noteworthy as the individuals in the alcoholic class were of lower average age, only 12 per cent. being over 60, while the corresponding ratio in the non-drinking group amounted to 28 per cent. Bertholet classified his cases on the basis of a minute histological examination, the result being to bring out more clearly the relation of degenerative change to alcoholic poisoning. Thus the most extreme stage of morbid alteration characterised by complete shrinkage of the cellular elements and entire absence of spermatozoa was met with in 55 per cent. of the alcoholic cases, but only in 15 per cent. of the subjects regarded as "non-drinkers." Mr. Neild's paper should be useful in directing attention to Bertholet's original memoir ("Action de l'Alcoolisme Chronique sur les Organes de l'Homme, et sur les Glandes Réproductrices en Particulier." Lausanne, 1913).

The British Dental Journal.—In a paper read before the Royal Society in March Mr. J. Howard Mummery recorded his observations on the nature of the tubes in marsupial enamel and its bearing upon enamel development. An abstract of the paper, with a reproduction of the illustrations, appears in the Nov. 15th issue of this journal. The author considers that the tubes run between the prisms and not in the prisms. In marsupial enamel the cement substance is imperfectly calcified compared to that in higher mammalian enamel, and this imperfect calcification allows the penetration of the dentinal fibril from the previously formed dentine. The fibril has a distinct tube wall and is resistant to the action of acids.—In the same issue Dr. H. R. Burpitt contributes a short paper on the relationship between defective teeth and malnutrition in children. 800 children were examined and divided into two classes as to whether more or less than four teeth were carious. He finds the boys and girls with the worst teeth are quite well nourished as the average of the children. The work would have been of more value if the condition of children with functional mouths had been recorded against those with advanced caries.—There is also an interesting article on the Naval Dental Service by Mr. E. E. Fletcher.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

WE continue our report of the proceedings of the General Medical Council for

TUESDAY, NOV. 24TH.

A Removal from the Register.

A report was received from the Executive Committee stating that it had considered a request, transmitted by the Scottish Branch Registrar, from Robert Ramsey, registered as of 2, Sandyford-place, Glasgow, W., M.B., Ch.B. 1901, U. Glasg., F.R.C.S. Edin. 1904, F.F.P.S. Glasg. 1905, for the removal of his name from the Medical Register on the ground of his having ceased to practise. A statutory declaration in accordance with the Standing Orders had been supplied, and the bodies concerned stated that they had no objection to the removal of the name from the Register. The committee resolved "that this request be reported to the Council, with a recommendation that it be acceded to."

The PRESIDENT moved that the recommendation of the report should be adopted by the Council.

The motion was agreed to.

Inspection and Visitation of Examinations.

The following report was received from the Executive Committee :—

At its meeting on July 13th, 1914, the Executive Committee considered business arising out of the following resolution adopted by the General Council on June 1st, 1914 :—

"That it be delegated to the Executive Committee to make all necessary arrangements for the inspection and visitation of qualifying examinations directed to begin in 1915, and to nominate to the Council at its November session suitable persons for appointment as inspectors."

According to the Standing Orders, three inspectors—one for medicine, one for surgery, and one for midwifery—must be appointed for definite periods. The remuneration is fixed at five guineas for each day during which the inspector is absent from home on the business of the Council, together with an allowance for his actual travelling and hotel expenses. The committee authorised the Registrar to obtain from the licensing bodies the dates of their qualifying examinations to be held during the year 1915 and to take other preliminary steps.

The committee on the same day also considered business arising out of the following resolution adopted by the General Council on June 1st, 1914 :—

"That it is advisable that all examinations conducted for the purpose of conferring the several registrable degrees, diplomas, or certificates in Sanitary Science, Public Health, or State Medicine, specified in Table G at page lxxv. of the Medical Register, should be inspected, and that it be remitted to the Executive Committee to consider and report upon the necessary arrangements for the inspection."

The committee resolved to recommend :—

(*a*) That an inspection of all the examinations for Diplomas in Public Health should be commenced in 1915. Those bodies whose examinations in Public Health have been instituted since the last inspection should be first inspected.

(*b*) That one inspector should be appointed for all the examinations, and should be remunerated on the same scale as the inspectors of the final examinations. Where practicable a member of the Council should accompany the inspector as visitor. The further consideration of the appointment of an inspector was postponed till the next meeting of the committee.

At a later meeting held on Sept. 15th, 1914, subsequent to the outbreak of the war, the committee considered what further action, if any, should be taken in regard to the visitation and inspection of qualifying examinations, and of examinations for diplomas in public health, respectively, during the year 1915, whereupon it was resolved: "That the resolutions of July 13th, 1914, be rescinded, and that the Executive Committee report to the Council that in view of the present unusual conditions it is inexpedient to proceed with the proposed inspection and visitation of qualifying examinptions and of examinations for Diplomas in Public Health during the year 1915."

On the motion of the PRESIDENT it was agreed to adopt the recommendations of the committee's report and to postpone the visitation and inspection for the present.

WEDNESDAY, NOV. 25TH.

The Council resumed its sittings at its offices, 299, Oxford-street, W. Sir DONALD MACALISTER, the President, was in the chair.

Charges against Practitioners.

The Council considered charges brought against practitioners.

The first case to be considered was that adjourned from May 29th, 1914, of William Blaikie Mason, registered as of 218, Somers-road, Southsea, M.R.C.S. Eng. 1893, L.R.C.P.

Lond. 1893, who had been summoned to appear before the Council on the following charge :—

That being a registered medical practitioner you on Nov. 1st, 1913, signed a certificate that one, Patrick Matthews, of 46, Raglan-street, Southsea, was suffering from gastric colic and was unable to follow his occupation, whereas you had neither seen nor examined the said Patrick Matthews, which said certificate was untrue, misleading, or improper. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainants were the Lords Commissioners of the Admiralty. At the conclusion of the proceedings in May the President announced the decision of the Council as follows :—

Mr. William Blaikie Mason, I have to inform you that the Council has found that the facts alleged against you in the notice of inquiry have been proved ; that the Council takes a very serious view indeed of the offence you have committed ; and that it has already marked its sense of the gravity of such offences by issuing in the medical journals and elsewhere in November, 1911, a warning notice as follows :—

Whereas registered medical practitioners are in certain cases bound by law to give, or may be from time to time called upon or requested to give, certificates signed by them in their professional capacity for subsequent use, either in courts of justice or for administrative purposes. And whereas such certificates include, *amongst others :*—

Certificates :—

(*a*) Under any statute relating to births, deaths, or disposal of the dead.
(*b*) Under the Lunacy Acts.
(*c*) Under the Vaccination Acts.
(*d*) Under the Factory Acts.
(*e*) In relation to children or to excusing school attendance.
(*f*) In connexion with sick benefit, insurance, and friendly societies.
(*g*) In connexion with workmen's compensation.
(*h*) In connexion with naval or merchant shipping.
(*i*) For procuring the issue of Foreign Office passports.
(*j*) For excusing attendance in courts of justice, in the public services, in public offices, or at ordinary employments.

And whereas it has been made to appear to the General Council from time to time that some registered medical practitioners have given and signed untrue, misleading, or improper certificates of the above specified or other descriptions.

Now, therefore, the General Medical Council hereby give notice that any registered medical practitioner who shall be shown to have given any untrue, misleading, or improper certificate, whether relating to the several matters above specified or otherwise, is liable to be adjudged by them to be guilty of "infamous conduct in a professional respect" and to have his name erased from the Medical Register under Section 29 of the Medical Act, 1858.

In order to give you an opportunity to prove to the Council that you realise the gravity of your offence, and to produce evidence from your professional brethren regarding your character and conduct generally, the Council has postponed judgment till the November session, when you will be required to attend to produce testimony to the effect above specified.

Mr. MASON attended in person, but the complainants, the Lords Commissioners of the Admiralty, wrote to say that they did not intend to be represented.

Mr. MASON submitted to the Council numerously signed testimonials as to his professional character from medical men in Portsmouth and its vicinity and also from prominent citizens.

The PRESIDENT announced the decision of the Council as follows : Mr. William Blaikie Mason, I have to inform you that the Council does not see fit to direct the Acting Registrar to erase from the Medical Register the name of William Blaikie Mason.

The Council proceeded to the consideration (adjourned from May 28th, 1914) of the case of Alexander Girvan, registered as of 8, Palace-street, Buckingham Gate, London, S.W., M.B., C.M. 1894, M.D. 1904, U. Glasg., who had been summoned to appear before the Council on the following charge :—

That being a registered medical practitioner you were on Dec. 4th, 1913 (after having elected to be dealt with summarily), convicted at the Westminster police-court of unlawfully and wilfully making a certain false declaration under and for the purposes of a certain Act relating to the registration of deaths and fined £10 and £10 costs.

At the conclusion of the proceedings on May 28th, 1914, the decision of the Council was announced by the PRESIDENT as follows : Mr. Alexander Girvan, I have to inform you that the Council has found your conviction for the misdemeanour alleged against you in the notice to have been proved ; that the Council takes the gravest view of the offence of which you have been convicted ; but that, having regard to the punishment which you have already received, the Council has suspended its judgment until the November session, when you will be required to attend and to produce evidence from medical men and others that in the interval your professional conduct has been without reproach.

Dr. Girvan attended, and was also represented by Mr. H. W. Wickham, counsel instructed by Messrs. Walton and Hurd, solicitors.

Mr. WICKHAM handed in testimonials from members of the medical profession to the effect that Dr. Girvan had in the interval conducted himself in consonance with the best traditions of the profession.

The PRESIDENT intimated the decision of the Council as follows : Mr. Girvan, I have to inform you that the Council has considered once more the conviction which has been proved against you, that the Council takes a very grave view of the misdemeanour of which you have been convicted, but in view of the certificates of character which have been put in on your behalf, the Council has not seen fit to direct the Acting Registrar to erase your name from the Medical Register.

The next case considered was that (adjourned from May 28th, 1914) of Haripado Chatterjee, registered as of 1, East View, South Moor, Stanley, Co. Durham, L.R.C.P & S. Edin., and L.R.F.P.S. Glasg. 1910, who had been summoned to appear before the Council on the following charge :—

That, being a registered medical practitioner, you, in the year 1913, accepted the post of medical officer of an association known as the South Moor Medical Association in the knowledge that such association had through its officials, by widely distributed circulars, by personal canvassing, and by solicitation of members of the Miners' Union in the South Moor district, sought to secure members of such association who, on joining it, would become the patients of the medical officer thereof.

And further that you have by public speaking in the South Moor district and by advertising in such speeches your own qualifications taken a prominent part in inducing and endeavouring to induce persons to join the said association and so to become your patients.

And further that throughout the year 1913, knowing that you were being advertised in the South Moor district as the doctor of the said association, you acquiesced in such advertising and continued to be employed as its medical officer.

And that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainants were the British Medical Association.

At the conclusion of the proceedings on May 28th, 1914, the decision of the Council was announced by the PRESIDENT as follows : Mr. Chatterjee, I have to inform you that the Council has carefully considered the facts alleged against you in the notice of inquiry, and has found that the following fact has been proved—viz., that you have by public speaking in the South Moor district and by advertising in such speeches your own qualifications taken a prominent part in inducing and endeavouring to induce persons to join the said association and so to become your patients, but that the Council has suspended judgment till the November session, when you will be required to be present and to produce evidence as to your professional conduct in the interval, and as to the methods of the association under which you have accepted employment.

The President explained to Mr. Chatterjee's solicitor, Mr. Stewart, that the other facts alleged in the notice of inquiry had not been proved to the satisfaction of the Council.

Mr. Chatterjee attended. Mr. W. E. Hempson, solicitor, represented the British Medical Association.

Mr. CHATTERJEE, addressing the Council, said that he had terminated his engagement with the South Moor Medical Association at the earliest possible moment. He had endeavoured in every way to act in strict accordance with the traditions of the medical profession and in harmony with the other medical practitioners in the district in which his practice was placed. He handed in testimonials as to his professional conduct in the interval.

The PRESIDENT announced the decision of the Council as follows : Mr. Chatterjee, the Council have carefully considered the evidence which you have brought on your own behalf and from two registered practitioners, and being satisfied that, as you severed your connexion with the South Moor Medical Association immediately, you could not bring the other evidence which you were required to furnish as to the methods by which this association is now conducted, the Council has not seen fit to direct the Acting Registrar to erase your name from the Medical Register.

The Council proceeded to the consideration (adjourned from June 1st, 1914) of the case of Caspar Denis Downing, registered as of 47, Mount Pleasant-square, Ranelagh, Dublin, L.A.H. Dubl., 1912, who had been summoned to appear before the Council on the following charge :—

> That, being a registered medical practitioner, you were convicted: "(1) On Feb. 22nd, 1913, at the City Police Court, Liverpool, of being guilty while drunk of disorderly behaviour in Windsor-street, Liverpool; (2) on August 2nd, 1913, at the City Police Court, Liverpool, of being guilty while drunk of disorderly behaviour in Boundary-street, Liverpool; and (3) on Dec. 13th, 1913, at the Inns Quay Police Court, Dublin, of being found drunk in a highway."

At the conclusion of the proceedings the President announced the decision of the Council as follows: I have to state that the Council has found that the convictions for misdemeanour alleged against Mr. Caspar Denis Downing in the notice of inquiry have been proved, but that judgment has been postponed until the next session of the Council in November, when Mr. Downing will be required to be present and to produce satisfactory evidence as to his conduct in the interval.

Mr. Downing did not attend nor was he represented.

Mr. Harper, the solicitor to the Council, stated that he had received from Mr. Downing on the previous day a telegram stating that he would be unable to be present.

The President announced the decision of the Council as follows: I have to announce that Caspar Denis Downing having been proved to have been convicted of the misdemeanour alleged against him in the notice the Council has directed the Acting Registrar to erase from the Medical Register the name of Caspar Denis Downing.

The Council then considered the case against Mr. Valleck Cartwright Mallan. This case was adjourned from May 28th, 1914. On that occasion the Dental Committee found that the following facts were established by the evidence :—

> The said Valleck Cartwright Mallan was registered in the Dentists Register on Dec. 6th, 1878, as "In practice on July 22nd, 1878," and his address in the Register for the current year is 106, Edgware-road, London, W.
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> The said Valleck Cartwright Mallan practises at 106, Edgware-road aforesaid, and issues and distributes as widely as he can a card and an explanatory pamphlet advertising his practice. The card contains a number of illustrations of American plateless teeth; the pamphlet enlarges upon the advantages of consulting the said V. C. Mallan, and contains a photographic reproduction of a newspaper paragraph on the long-standing reputation of the said V. C. Mallan and his family since the beginning of the nineteenth century. The said V. C. Mallan stated that the paragraph appeared in the *Catholic Times*, and was not an advertisement, although he advertises in that paper.
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> The complainants also submitted a two-column article which had appeared in the *Hampstead Advertiser* of July 17th, 1913, containing a portrait of the said V. C. Mallan, and photograph of a challenge cup which he had presented in connexion with local cricket. The said article contained a lengthy and puffing description of the said V. C. Mallam as a dentist as well as a public man interested in the public affairs of Marylebone.
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> The complainants did not offer any proof that the said V. C. Mallan was responsible for this article, but he admitted in answer to questions that he had been interviewed by the *Hampstead Advertiser* and had given the information, some of which was untrue, therein contained; that, although he had not paid for it, he had subscribed for one hundred copies, which he had sent out to various people; and that he had, in fact, used the article as an advertisement for his practice.
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> At the conclusion of the inquiry before the Dental Committee the said V. C. Mallan offered to give an undertaking that in future he would not advertise in any form of which the Council disapproved.

At the conclusion of the proceedings of the General Council on May 28th, 1914, the President announced its decision as follows: Mr. Mallan, the Council has considered the report of the Dental Committee in regard to the facts proved against you, and it has considered the undertaking which you have given, that in future you will not advertise in any form of which the Council disapproves. The Council has deferred the further consideration of your case to the November session, when you will be required to be present and to produce satisfactory evidence as to your conduct in the interval, with particular reference to the manner in which you have carried out the undertaking regarding advertising which you have given to the Council.

A further report on the case of Mr. Valleck Cartwright Mallan was now presented by the Dental Committee. It stated that at its meeting—

> Mr. William Fletcher Thomas Brown, managing clerk to Messrs. Bowman and Curtis-Hayward, gave evidence of a visit he had paid to the premises of the accused at 106, Edgware-road, W., and that the only difference he had observed in the appearance of the place since the hearing in May last was that the photographs of patients and testimonials from them had been removed from the entrance lobby. Mr. Turner stated that the complainants believed that the distribution of cards and pamphlets had ceased.
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> The said Valleck Cartwright Mallan gave evidence on his own behalf and addressed the committee. He admitted the accuracy of Mr. Brown's evidence, but denied that he had broken the undertaking not to advertise which he had given to the Council, and contended that such undertaking was intended to apply only to the first ground of complaint (as to cards and pamphlets), and that he had implicitly kept his promise. The second ground related to a single past incident. As regards the third ground of complaint, he had not intended that to be included in his undertaking at all, and had removed the photographs and testimonials from the passage because the complainants had made such a point of them. But he had not altered his window, or the front of his premises, and, in answer to a question by the Chairman, the said Valleck Cartwright Mallan said that he refused to alter it, it meant his living, and rather than do away with his window or signs on his premises he would prefer to be off the Register.

Mr. Mallan attended, and the complainants, the British Dental Association, were represented by Mr. J. R. B. Hart, counsel, instructed by Messrs. Bowman and Curtis-Hayward, solicitors.

Mr. Mallan, addressing the Council, said that he had carried out his promise to the Council. There was nothing in the Dentists Act which prohibited a practitioner showing the mechanical part of his profession, and the Council's resolution of May 20th, 1894, did not apply either to the exterior or interior of any building. He maintained that advertising applied to circulars of a certain character which contained claims of superiority over other practitioners.

Mr. Hart submitted that the undertaking which Mr. Mallan had given had not been fulfilled.

The President announced the decision of the Council as follows: Mr. Mallan, I have to call your particular attention to what I am going to say to you now. The charge made against you included the following statement: "That being a registered dentist you have extensively advertised your practice ...... (*e*) by means of various conspicuous notices on the outside and inside of your premises at 106, Edgware-road, W., where you carry on your profession, of a shop window on the ground floor thereof filled with shelves of false teeth, and notices advertising your practice." The Council are not entirely satisfied that you fully understood the undertaking which you gave to them to be an undertaking to discontinue advertising by the particular means set forth in this paragraph of the charge. The Council recognise that you have carried out an undertaking to discontinue advertising by the other means specified in the charge. The Council desire me to impress upon you that the means of advertising specified in paragraph (*e*) of the charge are no less objectionable than the others, and fall within the resolution of May, 1894, of which you are aware. They propose to give you a further opportunity of discontinuing the objectionable forms of advertising which you have continued to adopt, and for this purpose postpone their judgment in your case until May next. A copy of this judgment will be sent to you in due course.

The Council then considered two complaints against practitioners together. The first was the case of James Shirran Abernethy Walker, registered as of 416, Oldham-road, Manchester, M.B., C.M. 1887, M.D. 1898, Univ. Aberd., who had been summoned to appear before the Council on the following charge :—

> That being a registered medical practitioner you gave under the National Insurance Acts 1911 to 1913 four certificates dated July 19th and August 7th, 18th, and 25th, 1913, respectively, certifying that you had on those days respectively seen one Henrietta Horridge, and that she was suffering from chest affection, and was thereby still totally incapable of work, whereas you had not on any of those days either seen or examined the said Henrietta Horridge. And that you authorised John Watt, a registered medical practitioner, to furnish similar certificates on your behalf in respect of the said Henrietta Horridge which were dated respectively July 28th and August 5th, 1913, whereas neither you nor the said John Watt had either examined or seen her on either of those days. All of which certificates were untrue, misleading, or improper. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

The second was the case of John Watt, registered as of 416, Oldham-road, Newton Heath, Manchester, M.B., C.M. 1892, Univ. Glasg., who had been summoned to appear before the Council on the following charge :—

> That being a registered medical practitioner you gave under the National Insurance Acts 1911 to 1913 two certificates dated July 28th and August 5th, 1913, respectively, certifying that you had on those days respectively seen one Henrietta Horridge, and that she was suffering from chest affection and was thereby still totally incapable of work; whereas you had not on either of those days seen or examined the said Henrietta Horridge, both of which certificates were untrue, misleading, or improper. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

The Council's attention was called to this case by the Manchester Insurance Committee.

It was agreed to take both cases together.

Dr. Walker and Dr. Watt attended in person, and were also represented by Mr. A. J. F. Wedderburn, S.S.C.

The complainants, the Manchester Insurance Committee, were represented by Mr. R. V. Clayton and Dr. T. A. Goodfellow, of the Medical Service Subcommittee, and Mr. J. E. Lilley, the clerk to the committee.

Mr. R. V. CLAYTON addressed the Council on behalf of the complainants. He said that the Manchester Insurance Committee had brought this matter forward from their Medical Service Subcommittee. They thought that the facts required some attention from the Council, although they did not wish to press in any way the case in such a manner as would lead to the deletion of the names of the practitioners from the Medical Register. Dr. Walker, as the panel doctor, attended Miss Horridge for some considerable time, and there was no doubt that Dr. Walker was the regular medical attendant of her and her family. On July 10th, 1913, sanatorium treatment was accorded to her and she entered a sanatorium, where she was until Oct. 23rd. That covered the period mentioned in the charge. He understood that Dr. Walker would not allege that he went to see her at the sanatorium. Under the provisions of the National Insurance Act, in the case of an insured person who was the inmate of a sanatorium, the law was that the moneys that would have been paid to the insured person, if that person had dependants, would not be paid if he had no dependents, but they would go to the committee of the district. The moneys making up the allowance of this woman should not have been paid to her but to the Manchester Insurance Committee. These facts having come to the knowledge of the Medical Service Subcommittee, they thought it desirable that the case should be brought to the attention of the General Medical Council in order that some admonition should be pronounced to Dr. Walker not only in his own interests but in the interests of other medical men in Manchester, and of the profession generally. The Manchester Insurance Committee had no desire to press the matter to any extreme because at the time that these events occurred the regulations with regard to the giving of certificates by medical men were not as well known, nor in as defined a form as they had since become. It was now one of the regulations of the Insurance Commissioners that the doctor giving the certificate must give it only on the day he actually saw the patient.

The certificates in question were handed to the Council, and this closed the case for the complainants.

Dr. WALKER then gave evidence on his own behalf, and stated that he had been 22 years in practice at Manchester. Dr. Watt had been his assistant for the last seven or eight years. During the whole of his professional career no complaint had ever been made against his professional conduct. His practice was one of the largest in Manchester. The Horridge family had been patients of his for 14 years, and he knew them well as most respectable people. He had acted as medical man for many friendly societies before the National Insurance Act came into operation, and he had to give certificates of incapacity upon forms provided by the societies. These were not initial certificates but continuing certificates, and merely certified that the person was still incapable of work. That continuing certificate was given without any reference to the date of examination, and the continuing certificate was always brought to him by the patient, who got it from the society. He did not keep any of them in stock.

Mr. WEDDERBURN: What had you come to regard as the essential of these continuing certificates?

Dr. WALKER: The essential part was that the person was incapable of doing work. Miss Horridge was seen by him in April, 1913, and he then granted her the initial certificate on the form required by the National Insurance Commission. He saw her regularly until she went into a sanatorium, and accordingly each week he granted a continuing certificate of incapacity. She never did continue to follow her occupation. When he granted the certificate of July 19th he knew that she had been sent to the sanatorium.

Mr. WEDDERBURN: Have you any distinct recollection of how you came to grant it?

Dr. WALKER: Yes. Mrs. Horridge, the mother, brought me a certificate. I said to her that I did not think I could sign it, but Mrs. Horridge replied that the insurance agent told her to bring it to me and it would be all right. The only thing that was in my mind was whether the person was incapable of work.

Did you appreciate the words on the form of the certificate that you were expected to see the patient on that date?—Those words were not in my mind.

You had sufficient knowledge of Mrs. Horridge to know that she was not a person to tell you wrongly?—I had sufficient confidence in what she told me as to the agent's statement.

You were perfectly satisfied that Miss Horridge was unfit?—I had no doubt.

Had you any knowledge that a member of the society getting sanatorium treatment was not entitled to demand sickness benefit?—I did not know anything about the law.

The PRESIDENT: You knew this certificate was for the purpose of getting sickness benefit.

Dr. WALKER: I must have known that.

Mr. WEDDERBURN: You were not aware that the girl was not entitled to get the money?

Dr. WALKER: No.

Now you recognise your mistake in not attending to the form of the certificate?—Certainly. The only fact that struck my mind was that she was incapable of work. He went on to say that he felt this charge very keenly and was very sorry for having made this mistake, and since the incident had occurred he had attended very carefully to the form in which certificates were given.

Dr. MCVAIL asked Mr. Clayton whether the Manchester Insurance Committee had considered removing Dr. Walker's name from the panel lists.

Mr. CLAYTON: No. We thought that that would be much too drastic.

Dr. WATT was then called as a witness. He had heard the evidence of Dr. Walker and concurred in his explanation as to the nature of the work and the different certificates that had been in use. He recognised that he should be very careful in regard to any other certificates, and on no account would he grant any certificate without seeing the patient on the day it was granted. He very much regretted having made this mistake.

Mrs. HORRIDGE gave evidence that she brought the certificates to Dr. Walker to his surgery for signature.

Mr. J. U. SMITH, a member of the Medical Service Subcommittee of the Manchester Insurance Committee, was called as a witness. He said that he found that Dr. Walker was one of the hardest working doctors in Manchester, and he attended with the greatest attention to his panel patients.

The further hearing of the case was adjourned and the Council rose.

THURSDAY, NOV. 26TH.

The Council resumed its sitting at its offices, 299, Oxford-street, W. Sir DONALD MACALISTER, the President, was in the chair.

Complaint against Practitioners.

The Council resumed the hearing of the case against Dr. Walker and Dr. Watt adjourned from the previous day.

Mr. WEDDERBURN addressed the Council on behalf of these two practitioners. He pointed out the great confusion which arose after the passing of the National Insurance Act as to the giving of certificates. Confusion was particularly pronounced with regard to the continuing certificates, and in the case of the Approved Societies these had continued to be in the same terms as the certificates which Dr. Walker and Dr. Watt had been in the habit of granting before the Act came into operation. What had fixed its mark in the mind of these two practitioners was that they should certify merely that there was incapacity at the date of the certificate. They had not realised the alteration that had taken place. They now admitted that they had committed an irregularity in this case, but it was not a gross one. The instructions issued by the National Insurance Commissioners showed that there had been a great deal of misapprehension in the minds of practitioners on this matter, and the circulars which had been issued showed that even in September, 1913, a very great deal of confusion still existed.

The PRESIDENT announced the decision of the Council as follows: Dr. Walker and Dr. Watt, I have to inform you that the Council have carefully considered the matters brought to their notice during this inquiry, and have decided that the facts alleged against you in the notice of inquiry have been proved to the satisfaction of the Council. The Council take a very grave view of any laxity on the part of medical men in regard to the giving of certificates, but we have taken account of the explanation of your conduct in this matter, and that you have offered assurances with regard to the more careful exercise of this responsibility in the future. We have taken these explanations and assurances as given in good faith, and have accordingly not seen fit to direct the Registrar to erase your names from the Medical Register.

Erasure from the Dentists Register.

The Council then took up consideration of the case of Cartwright Davis, registered as of 81, Knightsbridge, S.W., "in practice on July 22nd, 1878," in regard to whom the Dental Committee had found the following facts:—

The Dentists Register contains the following entry:—

Name.	Address.	Date of registration.	Description and date of qualification.
Cartwright Davis.	81, Knightsbridge, London, S.W.	1878, Dec. 31st.	In practice on July 22nd, 1878.

Information having reached the British Dental Association early in the present year that the person practising as above was neither Cartwright Davis nor a dentist, the Association, with the assistance of the officials of the Council, made careful and thorough inquiry and ascertained the following facts.

Cartwright Davis was a name under which a Mr. Mallan practised dentistry, and in 1878 registered under the Dentists Act. Some years ago he took as an assistant one John Edwin Sutton, who, however, never qualified as a dentist or registered. On the death of Mallan his widow carried on the practice through Sutton, who married her daughter, and since 1903 Sutton had regularly signed the returns to the Registrar of the Council in the name of Cartwright Davis, thereby maintaining that name upon the Register and himself practising as a dentist under that name.

The British Dental Association prosecuted Sutton under the Perjury Act, 1911, and pressed for his committal for trial at the Central Criminal Court. He was tried on July 21st, 1914, at the Central Criminal Court before the Common Serjeant, and pleaded guilty to the charge of unlawfully procuring himself to be registered in the name of Cartwright Davis on the Register of persons qualified to practise as dentists. The Common Serjeant bound Sutton over in a recognisance of £20 to come up for judgment if called upon, but seeing that this was the first case brought forward under the new Act he did not impose any other penalty.

The facts as above stated have been formally brought to the attention of the Council by the British Dental Association, and the committee is advised that as Sutton, by pleading guilty, admitted the facts, it is not necessary, in dealing with the question of the removal of the name of Cartwright Davis from the Dentists Register, to hold a formal inquiry and require further proof of the facts. The committee therefore, being satisfied that the facts are as above stated, report them to the Council.

By section 13 of the Dentists Act the Council shall cause to be erased from the Dentists Register any entry which has been inaccurately or fraudulently made.

After consideration *in camerâ*,

The PRESIDENT said: I have to announce that the Council, having considered the report from the Dental Committee, have directed the Acting Registrar to erase from the Dentists Register the name of Cartwright Davis, the address, the date of registration, and the description and date of qualification which they are satisfied have been incorrectly made.

Education and Public Health Committees.

The Council, on the nomination of the Irish Branch Council, appointed Sir Lambert Ormsby to succeed the late Sir Christopher Nixon as a member of the Education Committee.

Business Committee.

On the nomination of the Irish Branch Council Dr. Magennis was appointed to succeed Dr. Adye-Curran as a member of the Public Health Committee.

Indian Medical Service Examination.

Sir CHARLES BALL, as chairman of the Education Committee, presented a return on the examination for entrance to the Indian Medical Service held in July. The return stated that there were 17 candidates holding qualifications from 21 licensing bodies, of whom 15 received commissions. Only one was rejected. He failed in pathology and also to obtain the total qualifying marks. He was a graduate of an Indian University. Returns from the Royal Navy and the Army Medical Department had not been received since the last session.

The Apothecaries' Hall of Ireland.

Sir CHARLES BALL presented the report by the Examination Committee on the examinations held in the Apothecaries' Hall of Ireland, 1913–14, by Dr. J. Magee Finny. Sir Charles Ball, after the report had been received, moved:—

> That the General Council take into consideration the question of representing to His Majesty's Most Honourable Privy Council that the course of study and examinations to be gone through in order to obtain the qualification of Licentiate of the Apothecaries' Hall of Ireland are not such as to secure the possession by persons obtaining that qualification of the requisite knowledge and skill for the efficient practice of their profession.

He said that this motion, which was a recommendation of the committee, would not bind the Council further than the expression of its opinion that it was necessary to discuss this matter. The Examination Committee thought that the time had arrived when it was the duty of the Council to discuss the question. A great deal had been said about personal animus on the part of individuals and that kind of thing. All he could say was that the Examination Committee, which contained a large number of members who did not come from Ireland, had without the slightest dissent agreed to this recommendation that the General Medical Council should take this matter into consideration. The Medical Act of 1886 laid this duty upon them, and according to its terms if at any time the Privy Council thought that the General Medical Council had failed to secure the maintenance of a sufficient standard of proficiency in any examination, the Privy Council might intervene and carry out these duties itself.

Mr. VERRALL seconded the motion and remarked that the report made it necessary to undertake this consideration.

Dr. MAGENNIS said that he was the representative on the Council of the Apothecaries' Hall of Ireland, but in addressing it he was labouring under two difficulties. The first one was inexperience of the procedure of the Council, and the other was that this report by the Examination Committee had fallen upon him like a bomb thrown, not by the Germans, but by the Allies. He himself had given notice of a motion to the effect that the time had now come when any exceptional treatment of the Apothecaries' Hall of Dublin as regarded the inspection of its examinations and reports upon them should cease. He would desire to point out that the reports to the Council had shown that the Apothecaries' Hall was carrying out its duties. Let him read a few extracts from the reports of the examiners. In 1910 this appeared: "The whole of the examination may be considered thoroughly adequate and not inferior in any way to the examinations held by other licensing bodies." Another one was: "On the whole, the examination may be considered as satisfactory so far as testing the knowledge of the candidates is concerned. The candidates who were successful would have been equally successful with any other licensing body." In 1912 the assistant examiners expressed entire satisfaction with the manner in which the examinations were held. In 1913 it was stated that "The examinations were, in our opinion, sufficient: the supply of material was adequate, and the examiners were painstaking and conscientious." He went on to say that the Apothecaries' Hall was not afraid to meet the Privy Council on this particular matter, but he did not think it was an opportune time to bring forward such a matter as this. He sincerely hoped that the recommendation would not be approved of.

The PRESIDENT remarked that this was merely a recommendation that the Council should take up the subject. It was not a recommendation that they should approach the Privy Council.

Dr. MACKAY observed that the material in this report called for the most serious consideration on the part of every member of the Council. He thought, however, that time should be given to members of the Council to consider the report.

Sir CHARLES BALL, in reply, said that he had expected to have had a further report from the assistant examiners in surgery on the examinations of the Apothecaries' Hall of Ireland held since May, 1914, but it had not reached him from the printers. The Examination Committee found that there were inconsistencies between the report of the examiners and a table furnished by the Apothecaries' Hall. He thought that the Council should authorise the Examination Committee to transmit the report and the table back to the Apothecaries' Hall, and ask for their observations. Therefore, he did not think that there was any harm in postponing the matter.

The motion was carried by a large majority.

Sir CHARLES BALL then moved :—

> That the Irish Branch Council be authorised to appoint for a further period of one year a deputy to attend and be present on behalf of the General Council at the professional examinations held by the Apothecaries' Hall for the purposes set forth in Section 18 of the Medical Act, 1858; that the deputy so appointed present to the Council a report on the general character of such examinations; and that he be paid a salary of £50 for the year.

He said that the Examination Committee were quite convinced that these examinations should be carefully watched.

Mr. VERRALL seconded.

Dr. MAGENNIS moved as an amendment :—

> That the time has come when any exceptional treatment of the Apothecaries' Hall of Dublin as regards inspection of its examinations and reports upon them should cease.

The amendment was not seconded, and the motion was agreed to.

Sir CHARLES BALL then moved that the Examination Committee send their report which he had been unable to circulate to the Apothecaries' Hall with the request that that body might make any explanations which they would desire.

Dr. SAUNDBY seconded, and the motion was agreed to.

Public Health Committee.

Sir JOHN MOORE submitted a report by the Public Health Committee. It was in the following terms :—

> The committee again considered a letter dated Nov. 8th, 1913, from the Secretary of the Royal Institute of Public Health asking whether, in the opinion of the General Medical Council, that institute is a "recognised medical school" within the meaning of "Rule 3 [or] (2) (*i*)" of the rules adopted by the Council for Diplomas in Public Health; and, if not, asking the General Medical Council to add such words to the regulations as will remove any doubt which may arise as to the courses of lectures at the Royal Institute of Public Health meeting the requirements.
>
> The committee had consulted the legal adviser and had under consideration a Memorandum which had been submitted by him as to the general bearing of the questions raised in the letter from the Royal Institute of Public Health. An important Memorandum by the President on the subject was also before the committee. After full discussion it was proposed by Dr. Newsholme, seconded by Mr. Verrall, and unanimously resolved :—
>
> That under legal advice the committee is of opinion that the wording of the rule in question (Rule 3, or (2) (*i*)) does not admit of the inclusion of the Royal Institute of Public Health as a department of public health of a recognised medical school, and that no addition of words without a complete alteration of the rule can effect such admission.
>
> The Public Health Committee is further of opinion that no adequate reason has been shown for altering the present rule.
>
> Note.—Rule 3, so far as the above resolutions are concerned, reads as follows: Every candidate shall have produced evidence *either* (1) that, &c.; *or* (2) that, &c.
>
> Note 1.—...... Provided that if the candidate has (i.) produced satisfactory evidence that he has attended a course or courses of instruction in sanitary law, vital statistics, epidemiology, school hygiene, and other subjects bearing on public health administration, given by a teacher or teachers in the department of public health of a recognised medical school ...... the period during which he has been engaged in acquiring practical knowledge of his duties under this rule may be reduced to three months, to include an attendance on at least 30 working days.

The report was adopted.

Pharmacopœia Committee.

The PRESIDENT said that the Pharmacopœia Committee had no report to submit. They had sold 1834 copies of the Pharmacopœia last year.

Students Registration Committee.

On the motion of Dr. NORMAN MOORE the report of the Students Registration Committee was adopted.

Dental Education and Examination Committee.

Mr. TOMES submitted a report from the Dental Education and Examination Committee.

It contained the following passages .—

> 1. Attention has been drawn to the fact that the recommendations of the Council in regard to the curriculum of dental students are printed in two places—in a pamphlet bearing date June, 1914, and also in a leaflet printed for the information of the licensing bodies, but which is given to anyone who asks for it.
>
> It is unfortunate that in these two places the recommendations are not couched in identical terms, and this has given rise to inquiries as to their interpretation.
>
> But before dealing with the matter the Committee think it desirable to communicate with the several licensing bodies, as any redrafting of these recommendations may involve questions of importance. ......
>
> 3. An application from the University of Melbourne for the recognition of its degeee of D.D.S. has been received. The Acting Registrar has pointed out that he has not yet received any application for the recognition of their B.D.S. degree, and suggests that it would be convenient to take the two at the same time.
>
> 4. The committee have received for their information an Amending Act of the Province of British Columbia, March 4, 1914 :—
>
> BRITISH COLUMBIA, MARCH 4, 1914.
>
> This amends the Dentists Act. It institutes qualifying examinations. Institutes a Dental Council which, for disciplinary purposes, is empowered to associate with it a county court judge, and may subpœna witnesses and call for documents. It provides also for the payment of witnesses so called. There is an appeal from its decisions to the Supreme Court and a further appeal to the Appeal Court.
>
> Unqualified practice is prohibited by the Act, and practice is defined as the receipt of payment in any form for professional services. The unqualified employees of a registered dentist are brought within its scope, the employer being also concomitantly liable. Registered medical practitioners are exempted from the operation of the Act.
>
> The committee note with satisfaction that the prohibitory sections are directed against the act of practice and do not merely prohibit the improper assumption of title.
>
> HONG KONG ORDINANCE, 1914,
>
> was communicated by Colonial Secretary, who invites observations. It establishes a Register and an Advisory Dental Board. It does not establish any form of diploma, but leaves large discretion to the Governor in Council in the recognition of grounds of admission to the Register, such as long practice in the colony, or other grounds deemed sufficient. Practice, or the offer to practice, or the wrongful assumption of titles are prohibited under penalty. Unsuccessful attempts at legislation were made in 1905, the difficulty being the small number of practitioners holding any qualification and the large number of Chinese practitioners. A reasoned report upon the measure is tendered by the local Attorney-General, who regards it as the best compromise attainable under the circumstances obtaining in the colony.

The report was adopted.

Dr. NEWSHOLME moved :—

> In view of the large amount of practice of dentistry by unqualified persons, and of the fact that the number of dentists on the Dental Register has not increased since the Register was formed, the several licensing bodies be asked to make suggestions of any modification or curtailment of the curriculum which may be desirable without lowering the standard of dental practice.

He said that he brought forward the motion for the following reasons. Reference to the Dental Registers showed that in 1878 there were 5289 dentists registered. In 1914 there were 5275. After making allowance for the large numbers of dentists who were admitted to the Register because they were in practice in 1878, those figures could not be regarded as satisfactory. There should not have been any decrease in the number of registered qualified dentists in this country. During the last 30 years the population of the United Kingdom had increased by nearly 30 per cent. From 1889 to 1912 the number of medical men had increased by about 46 per cent, and in these circumstances the lack of increase on the part of dentists was very remarkable. The demands for dental treatment had increased. It was a notorious fact that the number of unqualified and unregistered dentists exceeded the number who were qualified. That was most serious from the dental point of view and therefore from the point of view of public health. It was necessary in these circumstances to look into matters in order to see whether some improvement might not be required. He was not sure whether any modification of the curriculum would commend itself, and for that reason his motion was framed merely to obtain an expression of opinion from the licensing bodies whether any modification of the conditions might be practicable without lowering the standard. The Council by resolution had laid down what was a standard curriculum of four years. He had no fixed opinions in regard to the allocation of time in the curriculum, but it was important in the public interest that the whole subject should be inquired into, and also whether the four years' curriculum was necessary. He thought that in the first place the Council should ask the licensing bodies whether any modifications might be made without injury to the professional standard.

Mr. VERRALL seconded. He remarked that many medical men felt very much the shortage of dentists.

Dr. MACKAY remarked that the motion raised a grave question, but the modification of the curriculum was also a very serious matter. In his view the Council was not in a position to come to a decision on a question of such importance, and it would be only proper that this proposal should be remitted to the Dental Education Committee for report.

The PRESIDENT said that the motion introduced quite new matter, and no notice had been given that it would be raised. He thought that the proper course would be for the Council to refer the motion to the Dental Education Committee for consideration.

Mr. TOMES observed that the committee would accept the principle that inquiry was desirable. But he would point out that the number of qualified men on the Register had increased, and these men were taking the places of those who had obtained registration owing to the fact that they were in practice in 1878. The numbers of those seeking qualifications were not so great as he would have liked to see. The increase was insufficient. Whilst he was ready to consider what was in the motion he doubted whether the severity of the curriculum very largely affected the question. What more largely affected the question was the weakness of legislation.

Dr. Norman Moore considered the question raised by the motion as urgent.

Dr. Caton agreed that this was clearly a matter of the greatest importance, particularly in the provinces. When a portion of the public saw the vast increase in the numbers of the unregistered practitioners it was beginning to think that there was not much difference between the registered and the unregistered practitioner. He thought that the Council might consider as a temporary expedient a slightly lower standard. But the profession should take steps to obtain the reversal of the most unfortunate decision in the House of Lords some years ago.

Dr. Norman Walker suggested that if the Dental Education Committee could arrange to make inquiries in the meantime, the Council might consider the matter at its next session.

The President remarked that the Council might be able to do much more by giving the matter very full consideration.

Dr. Macdonald suggested that the motion should not be pressed. If that were done, he would move :

> That the motion should be referred to the Dental Education and Examination Committee for consideration, and that it have power to communicate with the licensing authorities on the subject.

Dr. Newsholme said that he had no desire to reduce the standard of dental education. He was prepared to accept Dr. Macdonald's suggestion as an alternative to his, on the understanding that the Dental Education Committee should make inquiries in the interval in order to elicit the facts and the opinion of the licensing bodies.

The motion of Dr. Newsholme was not pressed, and the Council adopted as a resolution the suggestion of Dr. Macdonald.

Unqualified Practice Prevention Committee.

Dr. Langley Browne submitted a report of the Unqualified Practice Prevention Committee. That report enumerated the recommendations of the Select Committee of the House of Commons on the subject of Patent Medicines. The Unqualified Practice Prevention Committee recommended—

> (*a*) That the General Council should convey to the Lord President of the Privy Council an expression of its complete approval of the recommendations of the Select Committee.
>
> (*b*) That the General Council represent to the Government, through the Lord President, the necessity for the immediate creation of a Ministry of Public Health, in pursuance of the recommendations of the Select Committee.

The Council formally adopted these recommendations.

Conclusion of Session.

On the motion of Dr. Norman Moore, the President was thanked for his services in the chair. The session then came to an end, and the Council rose to meet again in May, 1915.

HEALTH OF THE METROPOLITAN POLICE.

Appended to the report of the Commisssoner of Police of the metropolis (Sir E. Henry, G.C.V.O., K.C.B.) for the year 1913, is a report on the health of the force by the Surgeon-in-Chief, Mr. Charles A. Ballance, M.V.O., F.R.C.S. The latter states, *inter alia*, that the strength of all ranks on Jan. 1st, 1913, was 20,286, and on Dec. 31st, 1913, 20,844, giving as the mean 20,565. The daily average number of men on the sick list was 482·14 and the average daily number on sick leave 41·96. The average daily loss on the whole force by sickness showed a percentage of 2·85 as against 2·41 in 1912. In reference to this apparent increase the Surgeon-in-Chief observes that "there is no real increase of sickness. The reason the figures are higher is that after operations and after severe, and even slight, illness, longer periods of leave have been granted than formerly. A substantial period of sick leave is necessary in order to ensure the attainment of complete convalescence. An officer after operation or illness must be truly fit to stand the strain of duty at the present time. The good effects of longer periods of leave will be seen in the coming years. Health will be maintained and officers will be able to perform more efficient and longer service." The total number of police on the sick-list during the year on account of injury was 1926—viz., 1121 on duty and 805 not on duty. The number of police known to have been admitted into the general hospitals and infirmaries of the metropolis on the recommendation of the chief or divisional surgeons was 399, of whom 21 died. There were also 39 admissions to cottage hospitals, of whom 1 died, and 196, of whom 4 died, were admitted into special hospitals and sanatoriums. 663 officers were sent to convalescent homes for periods varying from 7 to 65 days. Fourteen men were admitted to workhouse infirmaries for observation, one of whom died, and 7 were certified insane and sent to asylums. The following is a table of the number of cases seen and operations performed by the dental surgeons:—Cases seen, 657; visits paid by police, 1189; extractions, 2950; fillings, 372; other treatment given, 205; local anæsthetic used, 739; "gas" administration, 27. There were 43 bacteriological examinations for tubercle bacilli and 22 for diphtheria bacilli. The number of police holding, on Dec. 31st, 1913, certificates of competency to render first aid was 16,284. There were 67 cases in which the police were specially commended for first aid rendered. The number of police injured whilst in the execution of their duty during the year was 2953, of whom, however, only 615 had to be placed on the sick list. In 1729 cases the injuries were caused by drunken prisoners and in 809 cases by other prisoners. There were 88 cases in which the injuries were caused by dog bites. In addition to the foregoing, 727 police were accidentally injured whilst on duty. Of these, 389 were injured by falling down or slipping in the streets or when examining premises, 28 by being kicked by horses, 12 by being trodden upon by horses, 124 while riding bicycles, 11 by bicycles ridden by other persons, 10 in testing or driving motor vehicles or boats, 18 by motor vehicles, 23 by objects falling, 9 by foreign objects entering the eye, 8 at fire drill, other causes 95.

Royal Albert Hospital, Devonport.—The annual meeting of the subscribers to the Royal Albert Hospital was held on Nov. 21st, under the presidency of the Bishop of Exeter. The medical report stated that for the 12 months ended Sept. 30th last the in-patients numbered 703. The financial statement showed the expenditure was £4254, being £985 in excess of the income. The committee draw attention to the serious financial position of the charity, and state that unless greater support is extended they will have to realise some more of their investments.

Scarcity of Doctors in Ireland.—At a meeting of the members of the Lurgan board of guardians held on Nov. 26th it was stated that no applications had been received for the post of resident medical officer. The salary offered was only £80, while in Belfast it was reported that the guardians were giving a resident doctor £120. A committee was appointed to consider the question of increasing the salary. The scarcity of medical men in Ireland is due partly to the fact that many are at the front, but also doctors on the panel in England are now giving larger salaries than formerly for assistants.

Reuben Harvey Memorial Prize.—The eleventh award of this triennial prize will be made on July 1st, 1915. The competition for the prize is open to all students of the various schools of medicine in Dublin which are recognised by the medical licensing bodies in Ireland, and also to graduates or licentiates of these bodies of not more than three years' standing at the time of the award. The prize, value £25, will be awarded to the writer of the best essay, on a subject to be selected by the candidate, evidencing original research in animal physiology or pathology; the essay to be illustrated by drawings or preparations. The essays, bearing fictitious signatures, are to be lodged with the Registrar of the Royal College of Physicians of Ireland, Kildare-street, Dublin, on or before June 1st, 1915.

THE LANCET.

LONDON: SATURDAY, DECEMBER 5, 1914.

The Research Schemes of the Medical Research Committee: the Influence of the War.

THE Medical Research Committee established under the National Insurance Act have now formulated their schemes for research, and the details of these schemes are appended to a letter explaining their general design, which has been addressed by Lord MOULTON of BANK, as chairman of the Medical Research Committee, to Mr. MASTERMAN, chairman of the National Health Insurance Joint Committee. The schemes have been officially approved and will now be acted upon, save where the exigencies of war have necessitated modifications. The proposal of the Governing Body of the Lister Institute to offer the Institute to the nation as a nucleus towards a National Institute of Medical Research was still before Lord MOULTON when writing the letter, but in the event of this amalgamation not occurring no change of programme would be imposed upon the Medical Research Committee, who were prepared to proceed to the equipment of the Mount Vernon Hospital, the buildings of which were recently acquired. We have already announced the appointments made to the staff of the National Research Institute, but we may remind our readers that they are as follows:—Bacteriology, Sir ALMROTH WRIGHT, assisted by Captain S. R. DOUGLAS; Applied Physiology, Professor LEONARD HILL, assisted by Professor BENJAMIN MOORE and Dr. MARTIN FLACK; Bio-Chemistry and Pharmacology, Dr. H. H. DALE, assisted by Dr. G. BARGER and Dr. A. J. EWINS; Statistics, Dr. JOHN BROWNLEE. Dr. W. M. FLETCHER, D.Sc., lately demonstrator of physiology in the University of Cambridge, is the secretary of the Medical Research Committee, whose office is at St. Stephen's House, Westminster, S.W.

The plan of future work, as foreshadowed in Lord MOULTON'S beautifully distinct communication, appears to us of the greatest promise. It is clear that provision is made for strong central control, as is necessary where public funds are concerned, but arrangements are also defined for the distribution of those funds, so that instead of their employment only, or even principally, in a central institution, the various problems of pathology and bacteriology will be attacked under public subsidy at all the principal scientific centres in England, Ireland, Scotland, and Wales. The different schemes have been carefully thought out, members of the Medical Research Committee having visited most of the selected centres, where they have received full assistance from the heads of the laboratories, showing that all apprehension has been removed that the provinces and the Scottish, Irish, and Welsh scientific institutions would have no proper lot in the developments of research projected. The cordiality of the heads of the laboratories has been secured by, among other things, the judgment with which the Committee have endeavoured to assign particular inquiries to particular research centres in accordance with the local facilities or the personal predilections of the directors. It will be the duty of the Medical Research Committee to correlate the results obtained, and to one wise and broad-minded decision of the Committee we wish to draw particular attention. Lord MOULTON states that he and his colleagues "are strongly of opinion that grants for personal remuneration to a scientific worker should be clearly distinguished from those made to meet laboratory or other expenses." To those who have conducted researches in return for Government or other grants this expression of opinion will have great significance, for it has too often happened that the workers have been actually out of pocket by their labours, being compelled to spend in the acquisition of special information a sum as large as or larger than that placed at their disposal. Lord MOULTON exposes the situation from the other side, pointing out that, in the absence of a distinction between remuneration for services and money paid for expenses, the temptation towards a dangerous reduction of expenditure would be present. This is so, and such frailty must be reckoned with, but scientific workers have much more often required protection from the tendency to spend their own money than from the tendency to save the money of others.

In a second direction the Committee have shown an intimate acquaintance with the difficulties of coöperative research work and have quietly dealt with them by the brief statement that the results of all this original work will not be permanently buried in the form of reports to the head of a department. The Committee propose that liberty shall be given to the workers who are aided from the National Medical Research Fund, and who are of a status to have independent work committed to them, to publish their results through the technical scientific journals. Workers under the direction of a professor, or under the head of any laboratory who is responsible to the Committee will be required to obtain the consent of their individual directors, but furnished with this the same liberty to publish their work will be accorded to them. On their side the Committee reserve the right to republish the results in any form where their issue would assist in the coördination of work done, or would indicate directions for work remaining to be done. A carefully thought out estimate of cost is appended to the schemes, and shows that the expenditure for the year 1914 leaves an unassigned balance of £10,000, an economy which is very desirable in view of the special pathological work which may shortly be needed in connexion with the war. And here it should be pointed out that the amount at the disposal of the National Medical Research Fund for 1914—namely, £56,500—is greater perhaps by £5000 than can be anticipated for 1915. For the Fund represents a capitation fee of 1*d.* paid by the Government for each insured person, and the number of insured persons next year will probably not be so great. It is well that the source of the Fund should be remembered, as the public appears to think that the insured persons supply the Fund.

A description of the emergency work that has been done already by the National Medical Research Fund in connexion with the war is affixed to Lord Moulton's letter. The inoculation department of St. Mary's Hospital, and with it the clinical facilities which Sir Almroth Wright enjoys, had been secured, together with Sir Almroth Wright's services, under the National Research scheme for the year from Oct. 1st, 1914, by an arrangement with St. Mary's Hospital, while by the summer of 1915 it was hoped that the Mount Vernon building would be transformed into a hospital for research purposes. But owing to the war this building has now been placed at the disposal of the War Office, and is fully occupied and staffed with a view to the treatment of the wounded. An option has accordingly been obtained from St. Mary's Hospital permitting the extension for a second year of the temporary arrangement with the Medical Research Committee. In the meantime permission has been given to Sir Almroth Wright and Captain Douglas to devote the whole of their time to the preparation of vaccines for the use of the forces, an enormous quantity of vaccines has been prepared for the Admiralty and the War Office at the Inoculation Department of St. Mary's Hospital, and Sir Almroth Wright has been appointed consultant physician to the forces overseas. At home the Medical Research Committee, with the cöoperation of Sir Alfred Keogh, are making arrangements, wherever practicable, for the proper bacteriological investigation of infected wounds at the chief military hospitals, and have also undertaken the compilation of the medical and surgical statistics of the war.

Vaccination.

Most of us must sometimes have wondered how far the vaccination of infants affects the type and epidemic periods of small-pox in this country, and to what extent our protection against epidemics in future will be influenced by the diminution which is taking place in the systematic vaccination of children. As a matter of history, the general adoption of infancy vaccination produced a marked change for the better in the epidemiological facts of small-pox; the disease ceased to be endemic, generally prevalent, and often fatal amongst children, and became rarer in its visitations and more and more one from which the principal sufferers who remained were adults. It does not necessarily follow, however, that under modern methods of dealing with small-pox reversion to an unprotected child population would entail reversion to eighteenth century prevalence. Again, it is beyond question that the protection of infancy vaccination, which as regards attack continues for several years, and as regards severity of illness lasts well into adult life or even to advanced age, has been priceless in past decades, when the population was running relatively large risks of exposure to infection. But looking at more recent experience, can this protection be considered so important a factor now that epidemics are so far apart and our health authorities, with the aid of emergency vaccination, can deal with them confidently and certainly when they arise? Such questions, of course, owe most of their importance to the purely artificial position brought about by legislation. Parliament has never attempted to prevent epidemic small-pox by vaccination. Had it done so the law would have required general and compulsory re-vaccination, or, if only a single vaccination could be insisted upon, it would at least have shifted the compulsory age to young adult life, as has often been proposed. Since the first Vaccination Act all official systems of vaccination have related, with greater or less efficiency, only to the vaccination of the infant, and have been determined quite as much by political as by medical or epidemiological considerations. So far as these systems have promoted vaccination they have consistently received support from medical opinion, and when regard is had to the many thousands of people who have owed their escape from attack by small-pox to their vaccination in infancy, and to the many others who owe to the same cause the fact that when attacked by small-pox they have not suffered severely or been seriously disfigured, medical action in the matter has been justified and fruitful for good. But meanwhile outbreaks of small-pox when they occur are dealt with by an increasingly efficient system applicable alike to those who have been vaccinated in infancy and to those who are unprotected. Epidemics are kept under by administrative measures which secure the prompt detection of cases and their removal to hospitals where they are surrounded by well-vaccinated persons who do not—it would be no exaggeration to say who cannot—contract small-pox, and are there kept till their infectiousness is over. Those who have been in contact with the cases before isolation are sought out, watched, and vaccinated wherever possible, any who develop small-pox being treated at the earliest possible moment in the same way as the first cases.

The system has steadily developed and many circumstances have combined to produce its continual improvement. The fact that small-pox hospitals have themselves been associated with the spread of small-pox when placed in populous neighbourhoods has been recognised, and properly isolated sites are now chosen. The system of compulsory notification, the interchange of notifications between health officers, the telephone, the motor-car, and all that these imply, have made the tracing of contact and suspected cases possible in a way neither imagined nor imaginable 20 or 30 years ago. The staff available in our local health departments has grown in numbers and efficiency, while vaccine lymph can now be made and stored in practically unlimited quantity and be supplied at the shortest notice. As finality in these methods has not yet been reached, and other improvements will no doubt be made, it has now become quite arguable that administration on present lines should suffice to keep epidemic small-pox within small dimensions, whether the country has been well vaccinated in infancy or not, and that so long as administration remains good and people consent to be vaccinated in emergency, systematic vaccination may cease without serious consequences. This is no doubt the popular view, and its danger, paradoxically, lies in the fact that a good deal can be said for it. It must be remembered that even the best schemes of administration may break down, and should the breakdown occur with small-pox in a virulent phase, an 1871 type of small-pox for example, the result among a totally unprotected community may be much more serious than that of any local breakdowns of which we have had recent experience. As the behaviour and occurrence of small-pox is full of surprises, it is only fair that parents should be encouraged to protect their children from risk, while the more children and adults there are in the population who possess the protection of vaccination and revaccination the better the security of the community against small-pox and the better for the individuals who are protected. For such reasons we think most medical men would say that notwithstanding altered conditions of recent years, it would still be advisable for the State to strengthen its vaccination laws, or if politically this is impossible, at least not to weaken such methods as remain for promoting systematic vaccination.

At the present moment it is useful to indicate in such obvious terms as the foregoing the position of medical science to some modern aspects of practical vaccination problems; and a book which has just appeared, written by Dr. C. K. MILLARD, the medical officer of health of Leicester, calls for notice in this connexion.[1] In some respects Dr. MILLARD takes what we believe is an exceptional view of the vaccination question. He would do away with systematic infancy vaccination as soon as possible, arguing that though it may be good for the individual it is actually prejudicial to the community, as it results in the presence among adults of cases of small-pox which are so mild that they are not easily recognised, and consequently go about and spread infection. We are not sure that this contention is complete on its epidemiological side. Previous vaccination or previous small-pox are not the only causes of mild and scarcely recognisable attacks of the disease. In epidemics of certain types, such as those which have lately occurred in the United States and in Australia, the infection is so attenuated that an abundance of very slight cases has been found among the unvaccinated. If Dr. MILLARD'S argument were sound, however, it would still hardly constitute a sufficient reason for advising a parent that his child should not be vaccinated; the whole force of the argument to be placed before him lies in the power of vaccination to protect the individual. On these and other matters the contentions and speculations in the volume are worth study and reflection. The reader, however, must be prepared to find scientific questions mingled with a considerable dose of provincial vaccination controversy, and if he is to get pleasure from his author he will have to enter into and appreciate the latter's pose. This is the position of the just man—we had almost written the only just man—to whom insight has been given to see the "vaccination question" in its true perspective, and to balance between those who are called "pro-vaccinists" and "antivaccinists." In these matters the hero of the book is a special conception of Dr. MILLARD, an antivaccinationist free to carry on all his propaganda against vaccination, if only he will admit that vaccination has a protective value against small-pox. As most antivaccinationists spend their time in contesting this very point, the position is occasionally a little bewildering, and by those who have no great interest in the antivaccinationist the balancing process may be found a little tedious. After all, it has been the "pro-vaccinist" doctor and not the antivaccinationist who has called in the resources of modern science and invention to aid in the suppression of small-pox, and it is hardly reasonable that every one of the doctor's actions which does not involve the inoculation of lymph should be put in the scale to weigh "against vaccination."

HEALTH OF CORNWALL IN 1913.—The medical officer of health of Cornwall in his annual report for 1913 states that the general death-rate was 11·85 per 1000, the lowest on record. The infant mortality was 91·77 compared with 84·01 in 1912. There were 414 deaths from pulmonary tuberculosis, being a rate of 1·25 per 1000 living, which Dr. R. Burnet considers high for an agricultural county. The deaths from "miner's phthisis" in 1911, 1912, and 1913 totalled 386. The medical officer of health alludes to the insufficient number of isolation hospitals in Cornwall, and states that although 1990 infectious cases were notified only 41 were treated in isolation hospitals.

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[1] The Vaccination Question in the Light of Modern Experience. By C. Killick Millard, M.D., D.Sc., Medical Officer of Health for Leicester. London: H. K. Lewis. 1914. Pp. 243. Price 6s. net.

Annotations.

"Ne quid nimis."

WAR AND THE QUALITY OF THE FOOD SUPPLY.

IN some directions during the time of war there will be temptation to introduce on a large scale cheap substitutes into foods. The practice of substitution has become a fine art, and the analyst admits to-day that his methods of detection cannot always claim precision. In normal times, in fact, we know that the practice of substitution is rife, but at a time of war there is sure to be a survey made by certain manufacturers as to the articles of food which can be used to replace those which threaten to become scarce or dear. In many cases such a substitution is quite legitimate on dietetic grounds so long as the purchaser is not misled. The use of glucose syrup, for example, in the place of sugar for sweetening and other purposes does not rob the original formula for the preparation of its energy value. When it is considered that before sugar can be digested it has first to be converted into glucose in the alimentary tract, no objection can be raised to the substitution of glucose for cane or beet sugar. The deceit, when practised, is not of serious dietetic import; but when cane sugar is expected in a preparation it should be obtained. A correct description on the label would of course save any misunderstanding in this matter as between the seller and the purchaser. It is a pity in some respects that glucose cannot be economically prepared for commercial purposes in crystalline form, but even then it would attract moisture too readily for practical use. Every degree of increased taxation on beer will no doubt lead some of the trade, at all events, to attempt to cheapen the production of the fluid, and here is a well-known field for the use of substitutes. It may be remembered that the brewer is not taxed on the alcoholic strength of his beer, but upon the measure of its gravity. It is, in fact, a malt tax rather than an alcohol tax, and is applied equally to malt beverages which may be non-alcoholic. The heavy gravity beers pay the highest toll, and we may expect that further attention will be directed to the increased output of weaker beers, and there may be a greater recourse to the use of substitutes—e.g., cheaper grain, maize and rice, and possibly bitters other than hops. Margarine, now so largely made from nut oils, a very large supply of the refined article being supplied by Germany, may possibly increase in price, though the supplies of genuine butter are not likely to diminish greatly. Our supplies of butter come, as is well known, from Denmark, Holland, France, and our colonies. It would be a curious and remarkable position, and not without the bounds of probability, if the chief cheap substitute for butter—namely, margarine—became dearer than butter itself. Here, again, there would be no loss sustained in actual dietetic value, because margarine is so carefully prepared now that there is very little reason for believing that it is less wholesome or less nutritive than its prototype. Many substitutes are as a matter of fact perfectly wholesome, and replace satisfactorily from a dietetic point of view the genuine article, but we hold that on no grounds can substitution be permitted unless the purchaser is made aware of it. In time of war the public should be protected just as effectually as in time of peace against dishonest dealing, and when increased temptations exist the administration of the Sale of Food and Drugs Act should be especially alert.

THE OPERATIVE TREATMENT OF SEVERE GASTRIC AND DUODENAL HÆMORRHAGES.

A STRONG plea for the conservative and expectant treatment of patients with bleeding gastric or duodenal ulcers is made by Lindberg,[1] who deprecates hasty surgical interference in these cases. His attention was particularly directed to the matter because he saw five fatal cases of hæmatemesis from gastric ulcer within a year; three of them were admitted to Faber's clinique at Copenhagen within the space of a fortnight. This led Lindberg to look into the statistics of the cases of gastric ulcer treated in this clinique between the years 1896 and 1914. He found they numbered 550, and in 68 of these the hæmorrhage was dangerous to life, amounting to a litre (1¾ pints) or more. All were treated on medical lines, but only 5 of the 68 died as a result of the loss of blood, a mortality of 7·3 per cent. He states his belief that surgical interference would have been powerless to save any of these five lives. Passing on to the published results of the surgical treatment of hæmatemesis, he is driven to the conclusion that they have hitherto proved far less favourable, and notes that the first operation to stop gastric hæmorrhage was performed in the year 1887 by Mikulicz. Various operations have been performed in these cases, and the following table, borrowed from Kraft (1910), sets out roughly their nature and the results they have yielded:—

Operation.	Cases.	Deaths.	Mortality per cent.
Gastrotomy	7	5	71
Gastro-entero-anastomosis	30	14	47
Cauterisation	6	3	50
Excision	23	5	22
Ligature	17	3	17
Total	83	30	37

It is true that the statistics do not make it plain how far the operations were indicated by single large or repeated small hæmorrhages, but Lindberg argues that the point is not one of great importance. Kraft himself gave an account of five cases in which the bleeding gastric ulcer was located by the use of Rovsing's gastroscope, an instrument that may prove to be of service in the treatment of these cases; two of the five patients died, and in a later communication (1912) he detailed two further cases treated surgically, both with a fatal result. Lindberg therefore advises that acute cases of dangerous gastric or duodenal hæmorrhage should always be treated medically. Stimulants of all sorts, and particularly intravenous injections of saline solution, should be avoided, as they raise the blood-pressure and lessen the tendency of the blood to clot. Should the patient become collapsed the foot of his bed may be raised on blocks. The hypodermic injection of morphine is contra-indicated; for while it gives the patient immediate relief, it often seems to promote further hæmorrhage—perhaps by preventing spasm of the gastric musculature and the tendency of such spasm to constrict the vessels in the gastric wall. On the other hand, Lindberg warmly recommends the use of subcutaneous injections of sterile gelatin in 10 per cent. solution. The dose is 40 c.c., given at a temperature of 40°C., and repeated at least once a day. Nutrient enemas and small quantities of milk by the mouth may be administered, or a few days of absolute starvation may be ordered. He also speaks well of Bourget's practice of washing out the stomach daily with 100 c.c. of 1 per cent. ferric chloride solution, the patient lying supine first and later prone; the solution is afterwards removed from the stomach by aspiration through the soft sound by means of which it was introduced. In the case of patients with repeated small hæmorrhages from gastric ulcers, particularly if they fail to recover from the resulting anæmia in the intervals between the attacks, Lindberg is inclined to advise surgical interference, with the proviso that the operation should be performed *à froid*, or when the patient is not acutely ill.

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[1] Lindberg, H.: Om Behandlingen af Lifsfarliga Magblödningar. Nordiskt Med. Arkiv, Stockholm, 1914, XLVII., Afd. II. Festskrift för G. Edgren.

THE CLINICAL ESTIMATION OF DIASTOLIC BLOOD PRESSURE.

IT has been recognised for some time that systolic blood pressure estimations give only partial evidence of the circulation; the diastolic pressure is at least of equal value, and only a combined knowledge of the two factors can give an approximate idea of the cardiac activity. The practical difficulty of gauging diastolic pressure has been considerable, and even the later French oscillation instruments, such as Pachon's, do not give wholly satisfactory results. It seems, however, that we have at last got a reliable method and one, too, of ready clinical application. This is the auditory method of McWilliam and Melvin. The fullest details of this method, together with the many careful experimental data upon which it is founded, are recorded in *Heart* (1914, v., 153), but other papers dealing with the same subject and by the same group of workers have appeared elsewhere. The only instrument wanted is the ordinary Riva-Rocci sphygmomanometer, or any of its modifications, and a stethoscope. The armlet of the instrument is applied to the upper arm, and in such a way as to leave a space between its lower margin and the bend of the elbow. Over the brachial artery at this situation the stethoscope can be applied. The systolic pressure may be measured in the ordinary way, the height of the mercury being read off at the moment when the added pressure has obliterated the radial pulse. The stethoscope applied over the brachial artery now fails to register any sound. On slowly relaxing the pressure and still listening with the stethoscope, it is curious to find that the pulsations can be heard. Normally over any artery no sound can be made out. The sounds vary in character and loudness with the falling pressure, and four stages can be recognised. These are (1) sharp, clear sound; (2) muffled or murmurish; (3) loud and clear; (4) dull; and (5) abolition of sound. The important transition to note is when the loud and clear sound gives way to the dull fourth stage. This gives the diastolic pressure. This transition is described as abrupt and definite, and we can certainly confirm this observation. Were it not so, indeed, the method would give little help. Sometimes the abrupt dulling practically coincides with abolition of all sound; often, however, the dull sound can be heard even though the pressure is still further lowered. Abolition of sound, in fact, is not the key for the diastolic pressure as was at one time supposed. This, then, is the auditory method. In one class of case only does it fail, that is in aortic disease, for here even in absence of any vessel constriction a murmur may be heard. The results of this method are of interest. A series of 51 cases of various kinds were examined by Dr. G. S. Melvin and Dr. J. R. Murray in the *Quarterly Journal of Medicine* (1914, vii., 419). The range of diastolic pressure is wide, from 150 mm. Hg to 50 mm. This is a much wider range than that found in the normal, 82 mm. to 50 mm. The pulse pressure, or the range between systolic and diastolic pressures, has also a wider range than in normal controls, 163 to 26 mm., as compared to 73 to 22 mm. Oscillatory diastolic estimations show similar variations, but comparison between the two methods shows discrepancies, the balance of accuracy, however, being with the auditory method. There is little doubt that observation by this method will modify our views on some aspects of blood pressure, not its least value being its ease of clinical application.

THE ORDER OF ST. JOHN OF JERUSALEM.

A PARTICULARLY fascinating little book at the present juncture is "Chivalry and the Wounded," which contains a historical account of the Hospitallers of St. John of Jerusalem (1014–1914), by E. M. Tenison.[1] The St. John Ambulance is well known to the public, but the fact that it owes its origin to the modern successor of one of the old orders of chivalry is perhaps less generally realised. The author describes in the first two chapters the foundation of the hospital in Jerusalem for the succour of travellers, exactly 900 years ago—viz., in 1014—and the organisation of the Knights Hospitallers after the capture of Jerusalem in 1099 into a regularly constituted religious order, which was formally recognised by the Pope in 1113. In 1291 the Knights of St. John in Palestine sent the women and children in the galleys of the Order from Acre to Cyprus, and with the Red Cross Knights Templars defended Acre to the last against the hosts of the Sultan, only a small number under the Grand Master, Villiers, effecting their escape to Cyprus, where the Order established a new home, transferred in 1310 to Rhodes. They were driven thence by the Sultan Solyman in 1522, and after being homeless eight years established themselves in Malta in 1530, where they remained until 1798. Meanwhile, about 1102, a branch of the Order had been established in England, with headquarters in Clerkenwell, where the hospital gate is still standing, and forms the headquarters of the present priory of the Order. Henry VIII. suppressed the Order and confiscated its property, and in 1548 under Edward VI. its priory was blown up. A brief revival occurred under Mary, but Elizabeth desecrated it by conferring the priory on her Master of the Revels. In 1798 its Maltese stronghold supinely submitted to General Bonaparte, when resistance for only a few weeks would have brought the British navy under Nelson tc their relief. Von Homspech, the sixty-ninth and last Grand Master of the Order, whose supineness had led to the disaster, died in 1805, a poverty stricken member of a religious community at Montpellier. The last chapter describes the revival in 1831 as a lay community of the English Order of St. John, which devoted itself to the relief of the sick and helpless, the support of cottage hospitals and convalescent homes, and the establishment in 1871 of the St. John Ambulance Association. There are branches of the Order also in Austria, Germany, and Spain. The book closes with an appeal to the nation for funds to help the Order to meet the strain of the war, in which it is doing splendid work through its mobilised hospital orderlies and upwards of 130 highly trained nurses serving at the front.

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[1] London: L. Upcott Gill and Son, Limited. 1914. Pp. 108. Price 1s.

THE SHADED LAMP IN SHOP WINDOWS.

A WORD of warning seems just now to be necessary in regard to the shading of incandescent electric lamps in the shop windows. The regulations requiring less light to be employed in the shops are in many instances complied with by simply wrapping round the upper part of the bulb some coloured or darkened paper. This method has its risks, inasmuch as the glowing filament gives off considerable heat, and when this heat is jacketed by an insulating substance the point of ignition may easily be reached. If an electric lamp be buried in cotton-wool the wool soon commences to scorch and ultimately to burst into flame. With a free circulation of air round the lamp there is little danger. There may be seen now in London, however, many very profusely dressed shop windows full of inflammable goods, and in the midst of them all, electric lamps are suspended partly wrapped in a paper shade. When the windows, as they soon will be, are heavily dressed with Christmas goods, the risk will be obviously increased. This is no time for promulgating scares, but we have actual evidence of a paper shade being fired in the way described, and we therefore write seriously on this matter in order that a real risk may be avoided. There seems to be some idea that because an electric filament is enclosed in a glass bulb and is not flame it is free from the possibility of setting other things on fire. That is not the case.

THE FRIEDMANN "CURE" FOR TUBERCULOSIS.

GERMAN traders have taken their wares to every land, and if they fail it is not for want of advertisement. In the same way certain of their medical specialists have been entrusted with missions to less fortunate lands, particularly America. The "twilight sleep" campaign of Professors Krönig and Gauss, who crossed the Atlantic to offer the women of America—for a consideration—the advantages of painless labour, was materially assisted by articles in the lay magazines and daily papers, for which, it is fair to say, the distinguished gynæcologists disclaimed all direct responsibility. But an even more notorious effort of the same kind was that of Dr. Friedmann, of Berlin, who went to New York a year or two ago with a tuberculin which was going to abolish tuberculosis. People crowded to the offices which Friedmann rented for the purpose, and the affair attained such publicity that the United States Government thought it worth their while to appoint a commission to inquire into the validity of the claims put forward. This commission has just reported, and bases its conclusions on a study of 94 cases of tuberculosis treated with the Friedmann remedy, a tuberculin made from living acid-fast bacilli which were said to inflict no injury in spite of their being alive at the time of injection. A more damning reply than that which the commission has furnished it would be impossible to conceive. It reports that the curative material has certain deleterious effects, which are especially likely to be manifested in tuberculous subjects; that its favourable influence on tuberculous processes is at best slight and uncertain; and that the organism used in the preparation of the vaccine is by no means proved to be a tubercle bacillus at all. The commission sums up as follows: "The claim of Dr. F. F. Friedmann to have originated a specific cure for tuberculosis is not substantiated by our investigation. The claim of Dr. F. F. Friedmann that the inoculation of persons and animals with his organism is without harmful properties is disproved." In fairness to his Berlin colleagues it must be remembered that they did not support Dr. Friedmann's claims, and we are glad to think that in THE LANCET they were rated at their right value from the beginning.

THE Bradshaw Lecture will be delivered in the theatre of the Royal College of Surgeons of England by Sir Frederic Eve, on Tuesday, Dec. 15th, at 5 P.M. precisely. The subject of the lecture will be Acute Hæmorrhagic Pancreatitis, with remarks on the Etiology of Chronic Pancreatitis. Fellows and Members of the College are invited to attend. Students and others who are not Fellows or Members of the College will be admitted on presentation of their private visiting cards.

ON Monday next, Dec. 7th, at 8.30 P.M., a discussion will take place at the Medical Society of London on Tetanus, with special reference to (*a*) prophylaxis; (*b*) the serum treatment of established tetanus—dosage and method of administration. The discussion will be introduced by Dr. D. Embleton, who will be followed by Professor F. W. Andrewes, Dr. John W. H. Eyre, Dr. R. B. Blair, Dr. Carl Browning, and others.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

NUMEROUS additions have been made to the Committee during the week, and promises of support have been received. Those who desire to join the Committee responsible for the collection and distribution of the Belgian Doctors' and Pharmacists' Relief Fund are asked to signify their intention promptly, as the lists will soon be printed.

Through the British committee the necessary steps have now been taken for the despatch to Brussels of the packets of medical material which had been approved of by a subcommittee appointed to arrange this matter.

The chairman, secretary, and treasurer of the Committee attended a meeting of the council of the Pharmaceutical Society, by invitation, on Tuesday last, when Sir Rickman Godlee made a brief statement of the work so far done by the Committee and of its intentions for the future. Several members of the council of the Society inquired as to how far any packets of medical material sent over to Belgium could be safeguarded from the enemy in occupation, and it was explained that the packets under despatch were designed as a tentative measure of relief, and that other packets would follow only if the first consignment reached its destination in safety. The council of the Pharmaceutical Society expressed hearty sympathy with the movement and promised to nominate members to the Committee and to give the fund every assistance.

A letter from Mr. Meredith Townsend is appended showing that there has been a fair response already to the request for instruments.

The following subscriptions to the fund have been received by Dr. H. A. Des Vœux, the treasurer, up to Tuesday evening last, in addition to subscriptions amounting to £469 5s. 6*d.*, which were acknowledged last week:—

	£	*s.*	*d.*
Mr. L. Stearn ...	1	1	0
Dr. P. Bowes ...	2	2	0
Dr. G. Peterkin ...	2	2	0
Dr. A. M. Edge ...	1	1	0
Mr. Bayley Owen	5	5	0
Dr. G. Edholm ...	1	1	0
Dr. John Freeman	2	2	0
Mr. R. D. Attwood	5	0	0
Dr. R. Jamieson ...	5	5	6
Dr. H. L. McKisach	2	2	0
Dr. Maurice Craig	5	5	0
Mr. Bilton Pollard	25	0	0
Dr. F. G. Bushnell	1	1	0
Dr. M. H. Taylor	2	2	0
Dr. T. Roberts-Williams	2	2	0
Dr. C. D. B. Hale	2	2	0
G. F. C. W.	0	10	0
Dr. A. Keith ...	1	1	0
Sir T. R. Fraser ...	5	5	0
Dr. Alfred Cox ...	5	0	0
Dr. H. E. Croker Fox	1	0	0
Mrs. Cressall ...	1	1	0
Mrs. Grogan... ...	1	1	0
Mr. F. G. Harvey	1	1	0
Mr. C. W. Goodchild (in memory of Mr. J. G. Goodchild, of H.M. Geological Survey)	2	2	0
Sir T. Barlow, Bt.	25	0	0
Mr. J. R. Wretts...	5	0	0
Dr. James Ritchie	10	0	0
Mr. Arthur Bulleid	2	2	0
Mr. W. Johnstone	5	0	0
Mr. E. B. Sherlock	2	2	0
Dr. Pearse	1	1	0
Dr. Adams	1	1	0
Mr. J. W. Papillon	1	1	0
Dr. F. E. Batten...	5	0	0
Society of Apothecaries	50	0	0
Dr. B. H. Kingsford	2	0	0
Mr. J. B. Lawford	5	5	0
Mr. Bernard Roth	10	10	0
Mr. H. Gaselee ...	3	3	0
Mr. T. B. Eames	5	5	0
Colonel D. Wilkie, I.M.S.	1	1	0
Dr. F. R. Mallett	5	0	0
Mr. A. Lister Harrison	5	5	0
Sir Rickman J. Godlee, Bt. ...	25	0	0
Sir Henry Morris, Bt.	20	0	0
Dr. Henry Humphreys ...	2	2	0
Dr. A. J. Campbell	5	0	0
Dr. Daniell	2	0	0
Mr. G. P. K. Grey	1	0	0
Dr. George Pernet	1	1	0
Dr. G. F. Barham	5	5	0
Mr. H. Cuthbert Dixon	5	5	0
Mr. L. Franklin ...	5	5	0
Miss Catherine Kirk	1	1	0
Dr. John Playfair...	3	3	0
Miss Constance Pine	5	0	0
Sir Donald MacAlister ...	10	0	0
Dr. C. J. Evers ...	2	2	0
Dr. W. Britain Jones...	1	1	0
Mr. W. B. Secretan	0	10	0
Mr. William Elmitt	1	1	0
Dr. H. T. Gillet ...	30	0	0
Mr. W. G. Williams	0	5	0
Mr. C. H. Walker...	25	0	0
Dr. Maynard Horne	3	3	0
Mr. F. Swinford Edwards	10	0	0
Miss Witts	2	0	0
Dr. Arthur Court...	10	0	0
Dr. M. Greenwood	1	1	0
Mr. W. Spyvee ...	2	2	0
Professor and Mrs. G. R. Murray ...	10	10	0
Mr. H. E. Mortis...	2	2	0
Mr. P. A. Steedman	5	0	0
Dr. Walter Tate ...	10	10	0
Dr. C. Percival White...	5	0	0
Dr. Frederick Taylor	10	10	0
Dr. N. S. Finzi ...	2	0	0
Dr. Ashley Leggatt	5	5	0
Mr. W. H. Jalland	5	0	0
Mr. Raymond Johnson	5	5	0
Dr. Gordon Sharp	0	10	6
Dr. G. G. M. Black	0	10	0
Dr. H. Newsome...	1	1	0
"F. Hill"	0	10	6
Lt.-Col. W. Alpin, I.M.S.	5	0	0
Dr. J. T. Conner...	1	1	0
Mr. R. C. Fuller ...	0	10	6
Dr. R. Warden Briggs	2	2	0
Mr. George H. Barton	1	1	0
Dr. C. D. Muspratt	2	2	0
Dr. Arthur Whitfield	2	2	0
Sir Clifford Allbutt	10	0	0
Dr. F. de Havilland Hall	3	3	0
Dr. J. Ratcliff-Gaylard	1	1	0
Mr. Arnold Gregory	0	10	6
Sir James Barr ...	5	5	0
Mr. Arthur H. Burgess	10	10	0
Surg.-Gen. F. J. Lilly, R.N. ...	5	0	0
Mr. Ernest W. Walsh	0	10	0
Dr. F. J. Smith ...	3	0	0
Anon.	2	2	0
Mr. H. Lynch Burgess	1	1	0
Sir Dyce Duckworth, Bt.... ...	3	3	0
Mr. John Marshall	0	10	6
Dr. T. H. Galbraith	2	2	0
Dr. J. Reid	1	1	0
Dr. Dawson Williams	5	5	0
Dr. S. Squire Sprigge	5	5	0
Mr. W. E. Good ... (will increase to £25 if three other Dorset medical men will give £25 each)	10	0	0
Anon	1	5	0

The Irish Committee.

The Irish Committee has been very active already. This Committee, which was started under the ægis of the Royal Colleges of Physicians and Surgeons, includes, in addition to the Presidents and Vice-Presidents of those bodies, the Presidents of University College, Dublin, and the President and Vice-President of the Pharmaceutical Society, the following representative names:—Sir Charles Ball, Mr. G. D. Beggs, M.P.S.I., Mr. Alexander Blayney, Sir Charles Cameron, Sir Arthur Chance, Dr. J. M. Finny, Dr. C. E. FitzGerald, Right Hon. M. F. Cox, Sir Andrew Horne, Sir John Lentaigne, Professor Lindsay, Dr. James Little, Dr. J. C. McWalter, Sir John Moore, Sir Lambert Ormsby, Sir Thomas Myles, Mr. R. D. Purefoy, Dr. Walter Smith, Sir Robert Woods, and Dr. W. M. A. Wright. Dr. T. P. C. Kirkpatrick, Registrar of the Royal College of Physicians, and Dr. C. M. Benson, Secretary of the Royal College of Surgeons, to whom cheques may be made payable, are acting as honorary secretaries and treasurers.

The following is a preliminary list of subscriptions which have been received or promised to the Irish Fund:—

	£	*s.*	*d.*
"Anonymous," ...	1	1	0
Dr. Arthur Atock	2	2	0
Dr. C. M. Benson	5	5	0
Mr. A. Blayney, F.R.C.S.I. ...	10	10	0
Dr. H. U. Byrne ...	2	2	0
Sir Charles Cameron	5	0	0
Dr. J. Galway Cooke	10	0	0
Dr. MacDowel Cosgrave, P.R.C.P.I.	10	10	0
Dr. S. M. Cowe ...	2	2	0
The Rt. Hon. M. F. Cox, P.C.... ...	5	5	0
Dr. W. M. Crofton	5	5	0
Dr. G. Cope	1	1	0
Dr. Albert Croly	5	5	0
Dr. J. T. Daniel ...	2	2	0
Dr. De la Hoyde ...	1	1	0
Dr. Martin Dempsey	3	3	0
Dr. Patrick Dempsey	5	5	0
Dr. Frank Dunne...	2	2	0
Mr. Conway Dwyer, P.R.C.S.I. ...	10	10	0
Miss A. S. Eustace	1	0	0
Dr. H. M. Eustace	1	0	0
Dr. N. Falkiner ...	2	2	0
Dr. J. M. Finny ...	2	2	0
Dr. C. E. FitzGerald	10	10	0
Dr. William Fottrell	2	0	0
Dr. W. V. Furlong	5	5	0
Dr. M. J. Gibson...	5	5	0
Dr. S. T. Gordon...	1	1	0
Sur.-Gen. C. Joynt	2	2	0
Dr. T. P. C. Kirkpatrick	10	10	0
Dr. Wm. Lalor ...	2	0	0
Sir John Lentaigne	10	10	0
Dr. Little	21	0	0
Dr. T. M. M'Evoy	2	2	0
Dr. M. M'Hugh ...	2	2	0
Professor E. P. M'Loughlin ...	10	10	0
Dr. R. B. McVittie	2	2	0
Dr. E. Magennis ...	1	1	0
Dr. Katherine Maguire	5	0	0
Dr. J. A. Matson ...	1	1	0
Mr. R. C. B. Maunsell F.R.C.S.I. ...	2	2	0
Dr. P. Merrin ...	1	1	0
Dr. George Moore	3	3	0
Sir John Moore ...	5	5	0
Dr. T. H. Moorhead	2	2	0
Dr. John Murphy	5	5	0
Dr. Thomas Neill	1	0	0
Dr. George Nesbitt	2	2	0
Dr. C. M. O'Brien	5	5	0
Dr. J. F. O'Carroll, V.-P.R.C.P.I. ...	10	10	0
Sir Lambert Ormsby	5	5	0
Dr. Alfred R. Parsons	5	5	0
Dr. George Peacocke	2	2	0
Dr. Joseph Petit ...	1	0	0
Miss Purefoy ...	5	0	0
Dr. R. Dancer Purefoy	10	0	0
Dr. F. C. Purser ...	5	5	0
Sir Joseph Redmond	5	5	0
Dr. R. J. Rowlette	2	2	0
Dr. J. Spencer Sheill...	2	2	0
Mr. Gregg Sherlock, F.R.C.S.I. ...	2	2	0
Dr. Alfred Smith...	5	5	0
Mr. T. N. Smith, F.R.C.S.I. ...	2	2	0
Dr. Walter Smith	5	5	0
Dr. Bethel Solomons	5	5	0
Mr. J. B. Story, F.R.C.S.I. ...	5	5	0
Mr. Wm. Taylor, V.-P.R.C.S.I. ...	10	10	0
Sir W. J. Thompson	3	3	0
Dr. D. Turner ...	2	2	0
Dr. Hastings Tweedy	10	10	0
Mr. W. I. de C. Wheeler, F.R.C.S.I. ...	10	10	0
Sir Stewart Woodhouse	10	10	0
The Clinical Club	10	10	0
The Odontoblast Club	10	10	0

THE APPEAL FOR SURGICAL INSTRUMENTS.

The following letter has been received from Mr. Meredith Townsend:—

SIR,—The appeal for surgical instruments made in your columns on behalf of Belgium doctors has met with a ready response, and I feel sure that the very urgent need for these has only to be more widely known for the Relief Committee to receive a greatly increased number. I ask especially for midwifery instruments, tooth forceps, scalpels, forceps of all descriptions, and scissors.

I enclose a list of those medical men and women who have up to the present given gifts.

I am, Sir, yours faithfully,
MEREDITH TOWNSEND,
Master of the Society of Apothecaries.
Apothecaries' Hall, Blackfriars, E.C., Dec. 1st, 1914.

Dr. Gardner, George-street, Falkirk; Lieutenant-Colonel Walsh, I.M.S., Heath House, St. Faith's, Norwich; Dr. G. Le Seelleur, Jersey; Dr. A. E. Fiddian, The Walk, Cardiff; Dr. John Douglas, Central-hill, Norwood; L.S.A.; Miss Igglesden, Torwood Villa, Torquay; Dr. Gregson, Lower Audley-street, Blackburn; Dr. W. Jack, Laurel Mount, Kendal; Dr. Eveline Cargill, Lansdown Lodge, Cheltenham; Dr. Campbell, Duns; Dr. Papillon, Brent Knoll; Mr. A. E. Tanner, Westminster Hospital, S.W.; Mr. J. B. Lawford, Harley-street, W.; Dr. Stormont, Tanworth-in-Arden, Birmingham; Dr. E. P. Hardey, Spring Bank, Hull; Surgeon-Major R. E. Heath, Bryn Adda, Eastbourne; Dr. W. B. Secretan, 10, Redlands-road, Reading; Dr. Hulbert, Highbury-grove, N.; Dr. F. Milnes Blumer, The Mount, Stafford; Dr. F. L. Ford, Rushmere, Wimbledon Common; Dr. Holden, Sudbury; Dr. Grierson, Dudley-street, Grimsby; Dr. Hurry, Westfield, Reading; Dr. Edith Serjeant, Waterloo-road, Wolverhampton; Dr. Ayling, Cowley Mansions, Brixton; Dr. Evershed, Harley-street, W.; Dr. Meredith Townsend, Upper Phillimore-place, W.; Dr. J. W. Bell, Portland-place, W.; Dr. Aitchison and Dr. Exton, Blackburn; Dr. S. E. Baxter, Wollaston, Wellingborough; Dr. Charles J. Renshaw, Beech Hurst, Ashton-on-Mersey; Dr. Herbert Marson, Stafford; Dr. N. S. Twist, Wakefield-road, Normanton; Dr. William Tibbles, Derby-road, Parkside, Nottingham; Surgeon-General F. J. Lilly, R.N., "Annandale," Woodland-grove, Weybridge; Sir Lauder Brunton, Stratford-place, W.; Dr. W. T. Scott, Banchory.

THE CLAIMS OF BRITISH SPAS.

(Continued from p. 1112.)

VI.—LEAMINGTON.

LEAMINGTON, in Warwickshire, is a dignified, peaceful town which possesses a quite classical history in regard to the healing qualities of its waters. These are saline and sulphated. The Pump Room well contains as much sodium chloride as 1245 parts per 100,000, together with calcium sulphate 248 parts, magnesium chloride 47 parts, and magnesium sulphate 125 parts. The presence of manganese and titanium has been noted. This chemical composition bears a resemblance to many well-known waters abroad, and, like most saline waters, those at Leamington are cold. They are employed both internally and externally, and according to the experience of those engaged in medical practice at Leamington are useful in both directions.

In regard to internal administration, perhaps the most important action of the waters is that on the bowels. They are decisively though not drastically aperient, relieving portal congestion and promoting the expulsion of toxic bodies. There is thus produced a healthy effect upon metabolism, and diseases of gouty origin come under favourable treatment at Leamington. In gastric disorders, also, Leamington waters do good apparently by clearing up the mucus on the gastric wall. In addition, and as might be expected from their chemical composition, these waters exercise a marked diuretic effect leading to an increase in the output of uric acid.

As regards external application there is a complete installation of baths, and there is an abundance of ways of administering the waters in this direction. These include, for example, saline baths, Nauheim baths, needle bath and douche, Aix and Vichy douche, and so on. In addition, there are the usual adjuncts to treatment—for example, electrical and radio-therapeutic applications, ionic medication—now found at all well-equipped hydropathic stations.

The country round is beautifully rural and soothing, and, of course, it includes many places full of historic attractions, as, for example, Kenilworth, Warwick, and Stratford-on-Avon. The social amenities are well provided for; there is an orchestra in the Pump Room in the winter and in the beautiful gardens adjoining the Pump Room and the Jephson gardens in the summer. The climate is described as mild and equable, warmer in winter and cooler in summer than the health resorts of Central Europe. The entire establishment is under the control of the town council.

VII.—STRATHPEFFER.

The reputation of Strathpeffer as a hydro-therapeutic station is based chiefly upon its remarkable sulphur waters and its peat or mud baths. Three years ago important developments took place at this spa chiefly in the direction of providing further accommodation for the increasing number of visitors. On that occasion one of our representatives was present, who thus had the opportunity of examining the systems of treatment adopted there. There are three sulphur wells and a chalybeate of the type of the "Stahlbrunnen" on the continent.

A typical analysis shows the presence of just over 2 grains per gallon of sodium sulphide in the sulphur wells, and about 19 cubic inches per gallon of sulphuretted hydrogen. In addition the water contains 38 grains per gallon of magnesium sulphate, 8 grains of magnesium carbonate, 2½ grains magnesium chloride, 5·8 grains sodium sulphate, and 12 grains calcium carbonate. Although strongly sulphuretted the water has a curiously cleansing effect upon the mouth owing to its alkaline constituents.

Primarily the reputation of Strathpeffer rests mainly upon successful results achieved in the treatment of chronic and subacute gout and rheumatism, rheumatoid arthritis (in certain stages), and chronic rheumatic affections of muscles and nerves, such as lumbago and sciatica, but the waters have been used with benefit also in chronic skin diseases, disorders of digestion, uterine troubles, and in functional nervous disorders. By means of an atomising apparatus a spray of the waters is obtained which when inhaled has given relief in the treatment of chronic and acute conditions of the respiratory passages. The waters are administered also in the form of douches, and the Plombières method of intestinal administration is available.

Strathpeffer is beautifully situated in a most picturesque part of the Highlands; the climate is seldom extreme in spite of the far-north situation. There is protection from the north by the slopes of

Ben Wyvis (3500 ft.), while the winds from the S. and S.W. are tempered by a broad belt of hills lying in these directions. It is a most attractive country of hills and glens.

Though a comparatively small place Strathpeffer is rapidly growing in favour as a health resort. It receives every year a wider patronage, which can only mean that its reputation in the treatment of certain maladies is increasing year by year, and that its waters and its air and beautiful surroundings do much good.

(To be continued.)

THE SERVICES.

ROYAL NAVAL VOLUNTEER RESERVE.

THE undermentioned has been appointed a Surgeon for temporary service in His Majesty's Fleet:—Miles Prior (dated Nov. 17th).

ARMY MEDICAL SERVICE.

Captain Sir Bertrand Edward Dawson, K.C.V.O., 2nd London General Hospital, Territorial Force, to be temporary Colonel (dated Nov. 21st).

ROYAL ARMY MEDICAL CORPS.

The undermentioned are granted temporary rank as follows whilst serving with the Allied Forces Base Hospital:—To be Majors: Arthur George Whitehorne-Cole, Bernard Hudson, and Philip Maynard Heath. To be Captains: Norman Duggan, Sidney Bertram Radley, and Ernest Digby Roberts. To be Lieutenants: Douglas Erith Derry, Oswald Tilson Dinnick, William Moore Shipworth Robinson, and Robert Henry Liscombe.

The undermentioned to be temporary Lieutenants:—Dated Oct. 9th: Samuel Ernest Picken. Dated Oct. 13th: Robert Stewart Taggart. Dated Oct. 21st: Joseph Greenfield Johnston. Dated Oct. 22nd: John Henry O'Neill. Dated Oct. 24th: Andrew Rowan Hamilton. Dated Oct. 26th: Herbert Emerson. Dated Nov. 5th: D'Arcy Rivers Warren Cowan. Dated Nov. 6th: Charles Frederick Constant. Dated Nov. 9th: Ernest Frederic Westmore Buckell. Dated Nov. 10th: Richard Orthin Hilton Jones. Dated Nov. 11th: Richard Lavington Barwick, John Ivison Russell, and Harold Turley Mant. Dated Nov. 12th: George Edward Miles. Dated Nov. 13th: James Bertram Mitton and James Parnell O'Flynn. Dated Nov. 14th: William Elwood, Kenneth John Yeo, Arthur Norman Hooper, Walter Herman Kiep, Frederick Carson, and Alexander John Kendrew. Dated Nov. 16th: Horace Powell Winsbury White, George Dugal Yates, Francis John Morris, Philip Lys Davies, Robert Clephane Maclachlan, Arthur Eisdell Moore, Albert Edward Mortimer Woolf, and Athelstane Nobbs. Dated Nov. 17th: Maurice Colman Turiansky and John Barugh Fisher. Dated Nov. 18th: Wallis Charles Palmer Bremner, Archibald Lang McLean, Andrew Banks Raffle, and Henry Catling. Dated Nov. 19th: Thomas Francis Murphy. Dated Nov. 21st: Cecil Clarke, Peterswald Pattison, and John Ingram Shepherd.

The undermentioned Lieutenants resign their temporary commissions:—Dated Nov. 28th: Robert D. M. Macpherson and John B. Moore.

INDIAN MEDICAL SERVICE.

Major M. M. Lowsley, R.A.M.C., commanding Station Hospital, and civil surgeon, Kasauli, has been appointed to the medical charge of the Lawrence Military Asylum, Sanawar. Major T. H. Gloster and Captain J. Taylor have reverted to military employ.

TERRITORIAL FORCE.

Royal Army Medical Corps.

London Mounted Brigade Field Ambulance: Frederick Powlett Rankin, Thomas W. S. Paterson, and Edward B. Hartnell to be Lieutenants.

Yorkshire Mounted Brigade Field Ambulance: William Herbert Nairne White to be Lieutenant.

1st Home Counties Field Ambulance: Hugh Salisbury Palmer to be Lieutenant.

1st Lowland Field Ambulance: Lieutenant-Colonel William Francis Somerville, Retired List (late of this Unit), to be Lieutenant-Colonel.

1st North Midland Field Ambulance: Francis Grey Bennett to be Lieutenant.

3rd North Midland Field Ambulance: Cadet Stanley Sextus Barrymore Harrison, from the London University Contingent, Senior Division, Officers Training Corps H. Dunmore Lane, and John G. J. Green to be Lieutenants.

3rd Northumbrian Field Ambulance: Captain Oswald L. Appleton to be Major (temporary).

1st West Riding Field Ambulance: To be Lieutenants: Frederick Joseph Stansfield, John Clifford Metcalfe, and Frank Wigglesworth.

2nd East Anglian Field Ambulance: Captain Alister C. Young, from the 1st East Anglian Field Ambulance, to be Captain.

2nd East Lancashire Field Ambulance: To be Lieutenants: William Turner and Alexander Muir Gibson.

1st South Midland Field Ambulance: Captain Hans F. W. Boeddicker to be Major (temporary).

1st Eastern General Hospital: Major Henry B. Roderick, from the Unattached List for the Territorial Force, to be Major.

3rd South Midland Field Ambulance: The undermentioned Captains to be Majors (temporary): Thomas A. Green and Percy Moxey. Richard Irving Dacre to be Lieutenant.

Highland Mounted Brigade Field Ambulance: Andrew Mowat (late Lieutenant, 5th Battalion, Seaforth Highlanders) to be Captain (temporary). Thomas Ernest Roberts to be Lieutenant.

2nd North Midland Field Ambulance: Thomas Graham to be Lieutenant.

3rd West Riding Field Ambulance: Charles William Smith to be Lieutenant.

2nd Welsh Field Ambulance: Captain Henry T. Samuel to be Major.

4th London General Hospital: Charles Edward Hamilton Milner to be Lieutenant.

2nd Western General Hospital: James Barlow Macalpine to be Captain. Manfred Moritz to be Lieutenant.

1st London (City of London) Sanitary Company: John Horatio Baldwin and Evelyn Ashley Cooper to be Lieutenants.

Sanitary Service: Captain Harry Hunter resigns his commission.

West Riding Clearing Hospital: The undermentioned to be Lieutenants: Frederick Peter Gibson, Hubert Tunstall Bates, Jeffery Wentworth Malim, and George Percy Parker Clapham.

Attached to Units other than Medical Units.—To be Majors: Surgeon-Captain James Wilson, from the Pembroke (Castlemartin) Yeomanry, and Surgeon Captain Abraham Thomas, from 2nd Welsh Brigade, Royal Field Artillery. To be Captains: Lieutenant Harold W. Read, Lieutenant Stanley L. Brimblecombe, and Captain Charles Henry Reginald Pentreath, New Zealand Medical Corps. To be Lieutenants: Alexander Ambrose, Ernest Beresford Keen (late Lieutenant, 13th (County of London) Princess Louise's Kensington Battalion, The London Regiment), George Candler, Lieutenant Harold K. Griffith, from the Unattached List, for the Territorial Force, Andrew Perlane Granger, and Kenneth Mackinnon (late Lieutenant R.A.M.C. Territorial Force).

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Captain William A. Hooton, from 2nd Western General Hospital, to be Captain.

VOLUNTEER FORCE.

2nd Volunteer Battalion, The King's (Shropshire Light Infantry): Surgeon Lieutenant-Colonel George Hollies is granted the honorary rank of Surgeon-Colonel (dated March 31st, 1908).

Forty-four Indian Medical Service officers have just reverted to military employ. The total number of officers thus reverting now amounts to over 200.

EDINBURGH UNIVERSITY: CHAIR OF MEDICINE.—At a meeting of the Curators of Patronage held on Nov. 30th the resignation of Professor John Wyllie, who had held the chair since 1900, was intimated. The curators have authorised their secretary, Mr. A. B. Fleming, W.S., 4, Albyn-place, Edinburgh, to receive applications from intending candidates up to Jan. 15th, 1915.

DUBLIN UNIVERSITY BIOLOGICAL ASSOCIATION.—The inaugural meeting of this association for the session 1914–15 was held on Nov. 28th, when the incoming President, Dr. J. T. Wigham, gave an interesting address on the Influence of Science on Modern Medicine. In the subsequent discussion it was stated that no less than 130 members of the association were at present serving with the colours.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 7943 births and 5760 deaths were registered during the week ended Saturday, Nov. 28th. The annual rate of mortality in these towns, which had been 13·4, 13·0, and 14·3 per 1000 in the three preceding weeks, rose in the week under notice to 16·6 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year. During the first eight weeks of the current quarter the mean annual death-rate in these towns averaged 14·0, against 14·3 per 1000 in the metropolis. Among the several towns the death-rate last week ranged from 5·2 in Ilford, 7·5 in Reading, 8·5 in Enfield, 8·7 in Lincoln, and 8·8 in Hornsey, to 23·2 in Rhondda, 23·3 in Newcastle-on-Tyne, 23·6 in Liverpool, 24·8 in Plymouth, and 25·5 in Rotherham.

The 5760 deaths from all causes were 794 in excess of the number in the previous week, and included 448 which were referred to the principal epidemic diseases, against numbers declining from 497 to 440 in the three preceding weeks. Of these 448 deaths, 174 resulted from measles, 102 from infantile diarrhœal diseases, 77 from diphtheria, 42 each from whooping-cough and scarlet fever, and 11 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3 per 1000, and coincided with that recorded in each of the two preceding weeks. The deaths attributed to measles, which had been 146, 167, and 148 in the three preceding weeks, rose to 174 last week, and caused the highest annual death-rates of 1·2 in Liverpool, 1·3 in Preston and in Rhondda, 1·4 in Plymouth, 2·1 in Oldham, 2·4 in Wallasey, 4·0 in Wigan, and 5·1 in Newcastle-on-Tyne. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 169, 131, and 138 in the three preceding weeks, fell to 102 last week, and included 28 in London, 8 each in Birmingham and Manchester, and 7 in Liverpool. The fatal cases of diphtheria, which had been 93, 58, and 74 in the three preceding weeks, rose to 77 last week, of which 24 belonged to London, 6 to Birmingham, and 3 each to Bristol, Liverpool, and Oldham. The deaths attributed to whooping-cough, which had been 38, 39, and 35 in the three preceding weeks, rose to 42 last week, of which 6 were recorded in Bristol, 5 each in London and Liverpool, 3 in Leeds, and 2 in Rhondda. The deaths referred to scarlet fever, which had been 34, 42, and 28 in the three preceding weeks, rose to 42 last week, and included 14 in London, 3 each in Birmingham and Manchester, and 2 each in Southampton, Smethwick, Warrington, and Newcastle-on-Tyne. The fatal cases of enteric fever numbered 11, against 17 in each of the three preceding weeks, and included 3 in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 3071 to 5005 in the 14 preceding weeks, had further risen to 5035 on Saturday last; 623 new cases were admitted during the week, against 690, 751, and 627 in the three preceding weeks. These hospitals also contained on Saturday last 1653 cases of diphtheria, 63 of enteric fever, 56 of whooping-cough, and 50 of measles, but not one of small-pox. The 1424 deaths from all causes in London were 160 in excess of the number in the previous week, and corresponded to an annual death-rate of 16·4 per 1000. The deaths referred to diseases of the respiratory system, which had been 193, 181, and 203 in the three preceding weeks, further rose to 324 in the week under notice, and were 110 above the number recorded in the corresponding week of last year.

Of the 5760 deaths from all causes in the 97 towns, 213 resulted from different forms of violence and 418 were the subject of coroners' inquests, while 1539 occurred in public institutions. The causes of 54, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Sheffield, Leeds, Bristol, Hull, and in 56 other smaller towns. Of the 54 uncertified causes of death, 13 were registered in Birmingham, 10 in Liverpool, 5 in Bootle, 3 each in St. Helens and Blackburn, and 2 each in Warrington, Blackpool, Darlington, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1093 births and 808 deaths were registered during the week ended Saturday, Nov. 28th. The annual rate of mortality in these towns, which had been 15·8, 15·2, and 16·6 per 1000 in the three preceding weeks, further increased to 18·4 per 1000 in the week under notice. During the first eight weeks of the current quarter the mean annual death-rate in these towns averaged 15·8, against 14·0 per 1000 in the 97 large English towns. Among the several towns the death-rate last week ranged from 7·6 in Kirkcaldy, 8·8 in Motherwell, and 13·5 in Edinburgh, to 21·5 in Perth, 24·3 in Hamilton, and 24·9 in Dundee.

The 808 deaths from all causes were 78 in excess of the number in the previous week, and included 82 which were referred to the principal epidemic diseases, against 50 and 69 in the two preceding weeks. Of these 82 deaths, 25 each resulted from scarlet fever and whooping-cough, 13 from diphtheria, 10 from infantile diarrhœa, 5 from measles, and 4 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·9, against 1·3 per 1000 in the 97 large English towns. The deaths attributed to scarlet fever, which had been 17, 8, and 16 in the three preceding weeks, further rose to 25 last week, of which 13 were registered in Glasgow, 6 in Aberdeen, and 3 in Dundee. The deaths referred to whooping-cough, which had been 12, 7, and 13 in the three preceding weeks, further rose to 25 last week, and included 22 in Glasgow. The fatal cases of diphtheria, which had been 18, 7, and 17 in the three preceding weeks, fell to 13 last week; 6 deaths occurred in Edinburgh, 3 in Glasgow, and 2 in Aberdeen. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had declined from 31 to 19 in the five preceding weeks, further fell to 10 last week, and included 6 in Glasgow and 2 in Dundee. The 5 deaths referred to measles were 3 in excess of the average in the earlier weeks of the quarter, and comprised 2 each in Dundee and Aberdeen and 1 in Glasgow. The 4 fatal cases of enteric fever were equal to the average in recent weeks, but showed no excess in any town.

The deaths referred to diseases of the respiratory system, which had steadily increased from 62 to 112 in the ten preceding weeks, further rose to 163 in the week under notice; 39 deaths resulted from different forms of violence, against 32 and 26 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 594 births and 449 deaths were registered during the week ended Saturday, Nov. 28th. The annual rate of mortality in these towns, which had been 18·2, 17·7, and 18·3 per 1000 in the three preceding weeks, further rose to 19·4 per 1000 in the week under notice. During the first eight weeks of the current quarter the mean annual death-rate in these towns averaged 17·0, against corresponding rates of 14·0 and 15·8 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 18·9 in Dublin (against 16·4 in London and 19·8 in Glasgow), 20·8 in Belfast, 19·7 in Cork, 15·2 in Londonderry, 19·0 in Limerick, and 20·9 in Waterford, while in the 21 smaller towns the mean death-rate was 18·5 per 1000.

The 449 deaths from all causes were 26 in excess of the number in the previous week, and included 40 which were referred to the principal epidemic diseases, against 40 and 44 in the two preceding weeks. Of these 40 deaths, 14 resulted from measles, 10 from scarlet ever, 10 from infantile diarrhœal diseases, 3 from whooping-cough, 2 from diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·7, against corresponding rates of 1·3 and 1·9 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 11, 9, and 10 in the three preceding weeks, rose to 14 last week, and were all registered in Belfast. The deaths referred to scarlet fever, which had been 6, 14, and 12 in the three preceding weeks, further fell to 10 last week, and included 3 each in Belfast and Waterford and 2 in Lisburn. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 21, 10, and 13 in the three preceding weeks, fell to 10 last week, of which 3 each were recorded in Dublin and Belfast. The 3 deaths attributed to whooping-cough were slightly below the average in the earlier weeks of the quarter, and comprised 2 in Cork and 1 in Belfast. The deaths from diphtheria occurred in Dublin and Cork, and the fatal case of enteric fever in Belfast. In addition to the above a death from typhus was registered in Dublin.

The deaths referred to diseases of the respiratory system, which had been 86, 67, and 85 in the three preceding weeks, further rose to 100 in the week under notice. Of the 449 deaths from all causes, 149, or 33 per cent., occurred in public institutions, and 17 resulted from various forms of violence. The causes of 22, or 4·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion did not exceed 0·9 per cent.

INDIA.

(FROM OUR OWN CORRESPONDENTS.)

St. John Ambulance War Fund.

THE headquarters St. John Ambulance War Fund for India publishes a list of donors to Oct. 27th, showing total subscriptions amounting to Rs.60,167.10.9; also a statement showing that the Freemasons of Northern India have contributed no less than Rs.3,334.11.0 to the Fund.

Red Cross War Gifts.

The generous undertaking given by the Indian railways to transport the Red Cross war gifts free over their respective railways has undoubtedly proved of much advantage. Every through train arriving at Victoria and Colaba terminus, Bombay, brings in many neatly packed cases marked with the "Red Cross." A large number of these gifts have been sent with the transports that have already left.

Red Cross Kit Bags.

A letter recently issued by the Indian St. John Ambulance Association gives details of a scheme for providing Red Cross kit bags with extra clothes and comforts for Indian soldiers on leaving hospital, which has received the approval of the Director of Medical Services in India. It is estimated that a thousand of these bags, at a cost of Rs.16 each, will be required monthly. It is intended to present one to each invalided soldier either on departure from Egypt or East Africa for India or on arrival at Bombay. It is also proposed to offer a supply of these bags to the hospitals for Indian soldiers in England.

The "Emden" and Town Planning.

Professor Geddes, accompanied by his son, has come to India in connexion with the approaching town-planning exhibitions in the leading cities of India. It is said that the consignments of models, drawings, plans, maps, and pictures, intended for use in connexion with the exhibitions, have been lost in the sinking of the *Chilkana* by the *Emden*. The exhibitions will, however, be held as arranged, and efforts are being made by Professor Geddes, both here and in England, to replace as many of these things as possible. Local efforts are also being made in the same direction, and it is expected that the exhibitions will be pushed through.

Bombay School of Tropical Medicine.

With reference to the scheme for the establishment of a school of tropical medicine and hygiene in Bombay, the Government have finally decided to establish the school in conjunction with the Bombay Bacteriological Laboratory at Parel, but the clinical materials available in the hospitals which are associated with the Grant Medical College should be utilised to the fullest extent possible for the instruction of students at the school.

Indian Medical Service Appointment.

Major D. McCay, I.M.S., professor of physiology, Medical College, Calcutta, is appointed to act as resident surgeon of College Hospital, in addition to his own duties, with effect from Sept. 17th.

Nov. 4th.

Correspondence.

"Audi alteram partem."

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

To the Editor of THE LANCET.

SIR,—I earnestly hope that this most deserving fund will meet with a hearty support from the profession. It has special claims upon some of us. Nearly a thousand practitioners in Great Britain are medical graduates of the University of Brussels, and it is to be hoped that few of them will forget their Belgian fellow graduates in the time of their adversity. A small contribution from every doctor of medicine of the University of Brussels in this country would be of considerable assistance, and could be well afforded by most.

In July, 1899, at the annual dinner of the Brussels Medical Graduates' Association, Dr. C. Burland, of Liverpool, being the then President, a complimentary telegram was sent to the King of the Belgians, and a courteous reply received from His Majesty before the festival ended. Surely the well-wishes expressed by the representatives of British practitioners with the Brussels degrees to the head of the Belgian State meant something more than mere hollow phrases of courtesy. They were then intended to show the regard of Brussels medical graduates for the University that had conferred their degrees, and their respect for the Government, and beautiful city, now trodden down by an insolent foe, that had created that University. Is it, then, too much to ask every Brussels medical graduate in this country to give a donation to this fund, if only to prove that the expressions of their representatives in 1899 to the King of the Belgians were sincere and honest, rather than hollow, meaningless words?—I am, Sir, yours faithfully,

MAJOR GREENWOOD, M.D.Brux., LL.B.Lond.

Hackney-road, N.E., Nov. 27th, 1914.

"STRUMOUS HABIT OF BODY."

To the Editor of THE LANCET.

SIR,—It would be interesting to know what Sir Dyce Duckworth, in his address before the Hunterian Society, published in THE LANCET of last week, precisely means by "strumous habit of body." The word "strumous" is probably unknown to the present-day generation of medical students, the term having been expunged some time ago from the index of diseases of the Royal College of Physicians of London. Older practitioners will remember that struma was applied to a type of diseases the cause of which was afterwards proved by Koch to be due to the tubercle bacillus; hence all disorders of this nature became known as tuberculous. But if by "strumous habit of body" Sir Dyce Duckworth recognises a pre-tuberculous state, especially identified with and necessary to the subsequent evolution of tubercle, reasons exist for believing that the term is misleading.

A so-called strumous person of former times, one in whom no active tubercle was present, showed evidence of a sluggish circulation, with cold, bluish, and often more or less swollen extremities, of pronounced liability to pus infections indicative of diminished resistance, to ulceration of the cornea, to certain chronic dermatoses, such as eczema, psoriasis, and sclerodermia, and thus without any evidence of tubercle these signs were described as strumous, in common with tuberculous glands, joints, and other forms of tuberculous disease. The advance, however, of modern medicine has thrown light upon these so-called strumous symptoms, which are not tuberculous. The signs, in short, are evidence of perverted metabolism, due to hypothyroidism, the proof of which is furnished by the fact that under thyroid treatment these "strumous" symptoms vanish. In cases among out-patients with ulceration of the cornea, corresponding to the former "strumous ophthalmia" type, and with the general signs of "struma," the improvement is rapid and permanent under the influence of thyroid extract. Apart from the local treatment, no other drug or preparation was used by me. In the course of testing the effect of thyroid treatment in eye disease, it is in this class of cases that I have found the results to be the most beneficial.

I am, Sir, yours faithfully,

London, W., Dec. 1st, 1914. PERCY DUNN.

THE POSITION OF BELGIAN DOCTORS.

To the Editor of THE LANCET.

SIR,—"At least 1000 of the doctors are now absolutely poverty-stricken, and 2000 to 3500 are suffering cruelly through this war," so writes Professor Jacobs, of Brussels. Let us turn now to THE LANCET of Oct. 3rd, and we are told that £90,000 (of the unallotted funds of 1913) have been divided amongst 1500 doctors in London alone. Eminent counsel and public opinion assert that the doctors have neither moral nor legal right to the possession of that money. The unallotted funds for 1913 were probably £200,000 or more; we surely are all agreed that not one penny of this rightly belongs to us. Our Belgian *confrères* have lost all but their soul, and the soul of our nation is certainly awakened. By returning that money, to which we have neither moral nor legal right, for the use of our Belgian colleagues we have opportunity of coming into line and showing that the soul of our profession is also awakened.

I am, Sir, yours faithfully,

Nottingham, Nov. 24th, 1914. J. A. OSWALD BRIGGS.

THE LATE MR. C. B. LOCKWOOD.

To the Editor of THE LANCET.

SIR,—As one who for 30 years was on terms of close intimacy with the late Mr. C. B. Lockwood, may I be permitted to add a few words to the excellent notice of his career lately published in your columns? My friendship with Lockwood dates back to his early student days, and I am well acquainted with the hard work and struggles he had to contend with. His long period of service in the dissecting-rooms, while it laid the foundation of great anatomical knowledge and subsequent surgical skill, also permanently damaged his health to an extent probably known only by myself. Lockwood often referred to this in conversation, and asserted he never recovered full health and vigour. To this cause may undoubtedly be ascribed those occasional asperities of manner which caused one of the kindest men to be feared by students in the wards or examination rooms. He was a great student of Napoleonic literature, and a good conversationalist. For many years we walked in the country on Sundays, a habit which we estimated tended to preserve health, during the hardships of early professional life in London, known only to those who have not the support of money or powerful friends. In later years we took sporting expeditions together in the too brief autumn holidays. I assisted at the landing of a 47 lb. Norwegian salmon, an achievement which ranked as high in Lockwood's estimation as some of his most important surgical achievements. We were also co-examiners to the Apothecaries' Company. Lockwood's devotion to St. Bartholomew's was extreme, and he once referred to the institution I had the honour of serving, as a "cottage hospital somewhere in the West-end!" He possessed in a prominent degree north country grit, and that love of sport and hospitality inherent in the Yorkshireman. He constantly entertained his friends, his house surgeons, and dressers. He was a fair fisherman and a good shot, and possessed a famous family of Dandie Dinmont terriers, not the least celebrated of which was my own faithful companion for many years.

Of Lockwood's great success as a surgeon it is needless for me to speak. I received much advice and a good deal of operative treatment from him in my own long and calamitous illness. He was especially known for his care and cleanliness, and was often employed in cases where avoidance of sepsis was of great importance. Hence the peculiar tragedy of his end, and it is singular we both should have suffered from the leading calamity of a surgical career in the form of different varieties of septic infection.

The news of his death came as a shock to myself and a circle of friends and old patients. The announcement of his funeral in the press, which was noticed too late for me to attend, was the first intimation I received of his decease. The students of his great hospital may copy the example of one who by work and indomitable perseverance attained to success, and who in his life exemplified the highest traditions of professional honour in his dealings with his brethren and the public.

I am, Sir, yours faithfully,

Dec. 1st, 1914. A. MARMADUKE SHEILD.

BIRDS AND MALARIA.

To the Editor of THE LANCET.

SIR,—The annotation entitled "The Duck as a Preventer of Yellow Fever and Malaria," which appeared in THE LANCET of Nov. 7th, directs attention to an interesting subject.

The experiments with water fowl carried out by Dr. Dixon, of Pennsylvania, are undoubtedly suggestive, but he was not, of course, the first to employ aquatic birds for the destruction of mosquito larvæ. Well-nigh a year ago[1] I reviewed a paper by Friedrichs on "Foreign and Native Mosquito-Destroying Fish," in the course of which he states that ducks, like fish, keep pools and ponds free from mosquito larvæ. Recently, when discussing this subject with Dr. Louis Sambon, Epidemiologist to the Wellcome Bureau of Scientific Research, he referred me to a paper of his,[2] published in 1902, wherein he mentions the larvivorous properties of water fowl. Dr. Sambon, who has an unrivalled knowledge of the historical literature both of tropical medicine and parasitology, has kindly given me the following extracts dealing with the part played by birds as destroyers of mosquitoes.

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[1] Tropical Diseases Bulletin, vol. ii., No. 12.

[2] Remarks on the Nomenclature, Etiology, and Prophylaxis of the Intermittent Fevers, Journal of Tropical Medicine, Sept. 15th, 1902.

Beutenmüller, of the Museum of Natural History, New York, in his "Essay on the Destruction of the Mosquito and House Fly," and also in Lamborn's "Dragon Flies *v.* Mosquitoes," 1890 (pp. 117–120), says:—

> *Fish and Water Fowl.*
>
> I consider, in the second place in natural remedies, the importance of fish and water fowl for the subjection of the mosquito. These instrumentalities I regard as of very considerable importance, and amongst natural remedies place them as the equivalents of and possibly of more interest than the dragon fly. For in this connexion it must be remembered that a method which attacks at its inception is more likely to lead to radical results than one applied later, after the scourge has reached considerable dimensions, and is not so readily grasped. If the larval stages of the mosquito can be reached effectively we have nipped the disorder, as it were, in the bud. It is true that distinguished entomologists state that the dragon-fly in its water life attacks and destroys the larvæ of the mosquito, but I have no information on that point, though from the manner in which the larvæ of the dragon-fly destroy each other it seems probable that their carnivorous propensities might lead them to attack the young of mosquitoes. Yet in this case I think the injury inflicted on mosquitoes would be slight, and the larger number would escape. But young and old fish, and also aquatic birds, will devour them in great numbers where they occur in large masses, and the cultivation of these denizens of our pools and lakes is, therefore, most advisable, as striking means for the diminishment of these pests.
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> Mr. Ludwig Riederer, of New York, informs me that he has dissected a fish caught in a fresh water lake, and found in its stomach hundreds of mosquito larvæ and pupæ. I said in the discussion of the problems that we might find it well to use some remedies, in some circumstances, that would preclude the use of others equally effective, while these latter would be again valuable under different conditions. Here is an illustration. Aquatic birds can be adopted for the purpose of destroying mosquito larvæ in ponds, rain-pools, &c., near houses, and in ponds in well-cleared fields, rolling and cultivated land, where there is no extent of wood, and management of the fowl can be made simple and their breeding profitable; and fish can be introduced in our public lakes. In these different provinces the different agents of this compound remedy will effect beneficial changes. It has been observed by myself how infrequent the larvæ are in the Central Park (New York City) lakes, and that their absence is due to the industry of the fresh water fowl, though there is another suggested cause which I will mention in a succeeding section. The obvious dissatisfaction over these remedies is their probable insufficiency; but as helpful and useful in the absence of more perfect means there is in my mind no doubt.

The use of birds for dealing with the *imagines* has also been advocated. Thus Weeks, writing in 1890 in Lamborn's book (*loc. cit.*), says:—

> Instead of devising methods to artificially breed disproportionate numbers of insectivorous insects, why is it not much more advisable to foster and preserve with little expense the means which we have at hand? I refer to the various species of insectivorous birds, which used to remain with us throughout the year, with the exception of two or three of the colder months, the most short-lived of which would be more effective in the destruction of noxious insects than 10,000 dragon flies.

In this connexion Dr. Sambon has been good enough to furnish me with an historical allusion which is very interesting and remarkable, and once more goes to prove the truth of the old saying that there is nothing new under the sun.

> Over a hundred years ago (exact date uncertain, but somewhere between 1790 and 1812) a Supplication was presented to the Sacred Tribunal in Rome by the Commune of Marsciano, Umbria, asking for a papal decree prohibiting the killing of nesting swallows for food because the destruction of these birds brought about the deterioration of the air, and hence insalubrity in the region. Two reasons were put forward in support of the contention. In the first place it was pointed out that swallows feed on the small flying insects which are so troublesome and hurtful to man and animals during the hot season, and secondly that by their frequent and rapid flight they produce a constant movement of the air which rarefies and purifies it. The petition was strongly endorsed by Dr. Giampiètro Picconi, the local physician, who stated that the destruction of insects by the swallows would not only prevent annoyance but remove a cause of sickness.
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> In his report to the S. Consulta on this Supplication Dr. Domenico Morichini admits that swallows do feed on those insects which multiply exceedingly during summer time, especially in low marshy places. He quotes the great Italian naturalist, Spallanzani, who recommended the protection of these birds on account of their destruction of mosquitoes and other troublesome insects. He also believes that their flight may cause a useful ventilation and prevent those reactions of the atmospheric elements which are known to give rise to febrile miasmata. He states that for this very purpose the Trappensi monks of Casamari and Fossanuova always keep large quantities of pigeons to continually renovate and improve the unhealthy air of the malarious places they inhabit, and that they have obtained from the Popes the right to threaten excommunication and five years of imprisonment in irons to anyone who dared to kill their pigeons.

Doubtless many other instances could be cited but those given will serve to illustrate the subject to which you have drawn attention.

I am, Sir, yours faithfully,
ANDREW BALFOUR

Wellcome Bureau of Scientific Research, Henrietta-street,
Cavendish-square, W., Nov. 23rd, 1914.

A PLEA FOR MORE CONSERVATIVE TREATMENT OF UTERINE APPENDAGES.

To the Editor of THE LANCET.

SIR,—Mr. E. P. Furber, in a letter in your issue of Nov. 28th, has raised an important question, and one which shows, if demonstration be needed, that a sound pathological knowledge is one of the essential accomplishments of what may be called the "compleat" surgeon. The whole question of treatment in the case recorded should have depended on the nature of the infecting organism and the character of the lesions which it is known to produce.

The organism was found to be a streptococcus. Mr. Furber's diagnosis of the lesion produced, and I presume that of the other surgeons who saw the case—"pyosalpingo-oöphoritis"—could not have been correct. No woman who has had double pyosalpingo-oöphoritis (tubal abscesses) has ever recovered and borne children, at least without operation.

However, the point of the case is that the patient was infected by streptococci, and if in these circumstances there be salpingitis without the formation of pyosalpinges a perfect functional result may ensue.

I emphasised this point in my "Principles of Gynæcology" (1910), where I made the following statement on p. 269: "It must not be forgotten, however, that staphylococcal and streptococcal infections do not destroy the mucous surfaces of the tubes in the way that gonococcal infections do; consequently complete functional recovery may occur after puerperal infection."

I am, Sir, yours faithfully,
W. BLAIR BELL.

Liverpool, Nov. 30th, 1914.

SANATORIUM TREATMENT.

To the Editor of THE LANCET.

SIR,—I should like to add one or two remarks to your annotation in THE LANCET of Nov. 14th on Professor Bang's paper on sanatorium treatment. It is not always possible to classify pulmonary tuberculosis or the results of its cure under different stages of the disease. Patients do not generally present a clear-cut, a well-defined first, second, or third stage when they come for treatment. The first stage often merges into the second, the second into the third. Even the classification into early, moderately advanced, and advanced stages may prove incorrect or misleading, as what one physician would consider early, another would call moderately advanced, and so on. Patients have been sent to me as early cases when they were really incurable and had to be sent home after a few days. Nor can the results of sanatorium treatment be tabulated according to the number of lobes involved, as a patient with four lobes slightly affected would be likely to get well, while another with only two lobes seriously diseased might succumb. Besides, as Dr. E. E. Prest pointed out in your last issue, very few patients are admitted into the sanatorium really in the first stage in spite of the Notification Act. No two patients are alike in the condition of their disease or in the extent of their cure. So that the present method of classification of sanatorium results is open to many fallacies which are apt to vitiate statistical figures brought forward to prove the efficacy of the treatment. In giving my results of sanatorium treatment published in my book on "Pulmonary Tuberculosis," I adopted a more practical plan and classified according to whether the patients sufficiently improved to return to work or not.

I agree with Professor Bang when he says that the results of some early cases are disappointing, while some advanced cases astonish one by getting well. Though the reason for this is rather obscure in a small number of cases, it is not difficult to explain in many others. Patients in the first stage handicapped with poor resistance and vicious surroundings often do badly, whereas those in the second stage with plenty of reserve vital powers do well and keep well. Again, it frequently happens that some patients apparently slightly affected think that there is very little the matter with them and do not carry out the treatment earnestly, but at the very first sign of return of health leave the sanatorium and take to their old ways and unhygienic lives when they get home, with the result that many of them relapse. But others though in an advanced stage, having suffered, and realising that their future as bread-winners depends upon the restoration of their health, do everything possible to get well and persevere in the treatment till they succeed. Also, as Dr. Prest has shown, many mild cases which are treated at home in a half-hearted and inefficient way drift into a chronic state, and when they do enter a sanatorium afterwards as first-stage cases do not make a satisfactory progress. So that the results of sanatorium treatment have more to do with such factors as the patient's resisting power, his perseverance, his means and his after-care, &c., than merely with the first, second, or third stage of the disease. When these factors are ignored or not taken into calculation, one is liable to blame the sanatorium treatment unjustly for any of its failure.

I am, Sir, yours faithfully,

Mendip Hills Sanatorium, Wells, Dec. 1st, 1914. C. MUTHU.

COAGULOSE.

To the Editor of THE LANCET.

SIR,—We observe that in some newspapers a statement appears regarding what is called a recent medical discovery by Professor Kocher, of Berne, who has introduced a substance called "coagulen," which coagulates the blood and instantly stops bleeding when applied to a wound internally or externally.

May we mention that the coagulating principle, or fibrin ferment, of the blood was isolated some years ago by a British scientist, Dr. G. H. A. Clowes, with whom was associated Dr. F. C. Busch, these two gentlemen working in the New York State Medical Research Laboratory, Buffalo. The preparation received the name of "coagulose," and it has been on the British market for more than a year. Immediately after war was declared Dr. Clowes, who happened to be in this country at the time, interviewed a number of medical men connected with the War Office, and he donated to the War Office a supply of coagulose, so that it might be employed in the hospitals where the wounded soldiers are being treated. We have reason to know that it is being used in some of these hospitals, and that it is producing excellent results.

While this does not in the least detract from the merit of Kocher's discovery, common fairness warrants us in asking you to make it quite clear that the announcement of this discovery was anticipated by at least three years by an Englishman working in America.

We are, Sir, yours faithfully,

London, W., Nov. 26th, 1914. PARKE, DAVIS, AND CO.

⁂ An annotation in THE LANCET of April 11th of this year entitled "A New Physiological Hæmostatic" may be consulted.—ED. L.

THE NATIONAL INSURANCE ACT.

MEDICAL TREATMENT OF INSURED PERSONS CALLED UP FOR SERVICE WITH HIS MAJESTY'S FORCES.

THE Insurance Commissioners, in response to requests for information as to the medical treatment during the war of insured persons who belong to the Naval or Army Reserve, or to the Territorial Forces, or have enlisted in the New Army, have issued a memorandum for the use of medical practitioners. This states that such persons generally are regarded as serving sailors or soldiers from the moment at which they are called up, or enlisted, and accepted for service until disembodiment or discharge. During this period they are not entitled to medical or sanatorium benefits under the National Insurance Acts, and accordingly no liability for their treatment rests on the panel practitioners by whom they have been accepted. The position of such persons is not affected by the fact that they may be permitted temporarily to continue to reside at home, even though they may be concurrently engaged in civil employment. An insured person who has been sent home owing to illness, or in consequence of having been wounded, must also be regarded as a serving sailor or soldier until the date of his discharge.

A member of the Naval or Army Reserve, Territorial Force, or New Army, who, while not entitled to treatment under the National Insurance Acts, applies for treatment to a practitioner on the panel or to an Insurance Committee, should be dealt with as follows:—

1. A member of the Naval Reserves should be referred to the naval surgeon and agent, if there is one in the district, and in the absence of a naval surgeon and agent should be directed to make his own arrangements with a qualified civil practitioner for treatment. In the former case the surgeon and agent will receive his fees from the Admiralty; in the latter the patient will be responsible for settling the doctor's charges, but will be eligible to receive sick allowance under the King's Regulations and Admiralty instructions on making application for the same through his commanding officer.

2. A member of the Army Reserve, Territorial Force, or New Army on furlough should be referred to the officer commanding the nearest military station, who in every case will communicate with the Assistant Director of Medical Services of the area in which the soldier is temporarily residing. In case of emergency, or when a soldier unfit to travel resides at a distance from a military hospital, the soldier may apply to a civil practitioner to whom he will show his furlough paper, and who will be allowed to charge for attendance at the rate laid down under Army Regulations (A.F. O. 1667), provided that the soldier immediately reports to the officer commanding the nearest military station, as directed above.

Upon discharge, or, in the case of a member of the Reserve or Territorial Forces, upon the demobilisation or disembodiment of these forces, the insured person will again become entitled to medical benefit under the National Insurance Acts (unless otherwise disentitled); and he will then be entitled to make a selection of the method by which he desires to obtain treatment as though he had newly entered into insurance. In such cases where an insured person on return from service takes up a new residence, the arrangements which are already in existence for "removals" and "temporary residents" will apply.

THE STATUS OF MEDICAL PARTNERSHIPS UNDER THE INSURANCE ACT.

At a recent meeting of the Panel Committee for the County of London the Panel Service Subcommittee submitted the opinion of counsel (Mr. F. Gore Browne, K.C.) upon questions laid before him as to the legal position of the members of a firm or partnership of medical practitioners under the Insurance Act. In substance Mr. Gore Browne advised that a firm or partnership is not a separate entity at law, that the Act contemplates arrangements with individual practitioners only, and that any agreement purporting to deal with a firm as such would be irregular. He was of opinion that "the arrangements with the respective members of a firm might be embodied in a single agreement, but the right of the insured under Section 15 (2) (*c*) to select a practitioner would give him the right to select which partner he chose, and the agreement would have to contain a provision to that effect—the agreement would not be a joint agreement in this case, but a number of separate agreements included in one document." Further, a committee could not be called upon to agree with a firm as such or with its respective members in one document, and can insist upon arrangements already made being so far modified as to make them comply with the Act. He also said that the Acts and Regulations do not deal with partnership cases, so that changes in partnership are not matters of which notice to insured persons treated by members of a partnership can be insisted on by a committee. It need hardly be said that Mr. Gore Browne is a member of the Bar whose advice carries all the weight attachable to "counsel's opinion."

EXCESSIVE COST OF PRESCRIPTIONS.

The Pharmacy Committee of the London Panel Committee has had before it 40 cases in which representations have been made by the Pharmaceutical Committee alleging excess in the cost of drugs and appliances prescribed. In five cases no investigation was made owing to the medical practitioners affected being absent from their practices on military duty. In 17 cases it was found that there was excess, in 9 that there was not, and in the remaining 9 that the period under review (April 12th to 30th, 1914) was not sufficiently extensive to enable the subcommittee to decide whether the cost of the drugs and appliances ordered by the practitioner was or was not in excess of what was reasonably necessary for adequate treatment of his patients.

INSURANCE WORK WHEN THE WAR IS OVER.

At a meeting of the West Sussex Insurance Committee the Rev. W. D. Yoward, chairman, called attention to the changed conditions with regard to the working of the Insurance Act likely to prevail when the war is over, and a resolution was carried inviting the National Association of Insurance Committees to take steps to prepare beforehand for what might be expected. It was suggested that as a result of the war thousands of men now serving or about to serve are likely to return and again become insured persons with greatly impaired health. This would mean that a much larger number of persons would probably require the benefits of the Act during a period following demobilisation than would have been the case upon the normal actuarial basis, if there had been no war. The strain in such an event would be felt by the committees and approved societies, and among those who would be affected would be the medical practitioners and the druggists. The question is one of importance, and will no doubt claim and receive the attention of the Government when it arises, but discussion preceding the necessity for immediate action will do no harm. In the discussion on the occasion referred to it was pointed out that a proportion of the incapacity due to the war would necessarily be met as such by the Government independently of insurance.

UNIVERSITY OF LONDON.—The Paul Philip Reitlinger Prize, offered this year for an essay embodying the result of research work on a medical subject, has been awarded to Alfred Hope Gosse, M.A., M.B. Camb., M.R.C.P., London Hospital Medical College, for an essay on "The Heart in Acute Rheumatism with Special Reference to Graphic Methods of Investigation." The prize, this year of the value of £40, was founded with funds given to the University by Mr. Albert Reitlinger in memory of his son, a student of St. George's Hospital Medical School, who died on Dec. 3rd, 1911. Next year the prize will be offered for the best essay on "The Economic Condition of the People of England in 1815 in Comparison with the Present Day."

Obituary.

WALTER JENNINGS MILLES, M.D. BRUX., F.R.C.S. ENG.

ALL those who knew Dr. Jennings Milles will have seen the notice of his sudden death on Oct. 22nd with the sincerest regret. He was born at St. Margaret's, Collier-street, Yalding, Kent, on March 21st, 1854, and was the second surviving son of the late Rev. T. Milles, vicar of that parish for 30 years. He was educated at Tonbridge School, where he not only worked well but distinguished himself as an athlete, becoming captain of the first XV. He subsequently studied medicine at King's College, London, and qualified as M.R.C.S. Eng. in 1877 and L.R.C.P. Lond. in 1879. He took the diploma of F.R.C.S. in 1880, and on one of his subsequent visits to Europe in 1890 took the M.D. degree of Brussels.

After he qualified Dr. Milles was appointed house surgeon to the late Mr. John Wood at King's College Hospital, and subsequently became surgical registrar. His tastes led him to pay special attention to ophthalmic surgery, and he subsequently became house surgeon to the Ophthalmic Hospital, Moorfields. He then commenced practice in London as an ophthalmic surgeon, and had he remained in London there can be no doubt that he would have become one of our leading ophthalmic surgeons.

In 1884, however, he was asked to join the firm of Henderson and Macleod in Shanghai, then the leading medical firm in Shanghai, if not also in the East, and after much consideration he decided to accept the offer, and sailed for China on June 18th, 1884. He practised there for 26 years, retiring on account of ill-health in 1910.

While he was in London he did a good deal of work on the pathology of the eye and also became much interested in bacteriology. In 1878 he commenced a research in collaboration with Mr. A. S. Underwood on the bacteriology of the teeth, and their work demonstrated the important part that bacteria play in caries of the teeth. Their results were brought before the International Medical Congress in 1881, and will be found in the Transactions of that Congress. In China he quickly became immersed in the work of a large general practice, especially in surgical and ophthalmic work, and his opinion on the latter subject was especially sought after not only by the Europeans but by the Chinese. He was surgeon-major in the Shanghai Volunteers, and received the China medal after the Boxer riots in 1900. He also received the Order of Anam after the Russo-Japanese war.

Dr. Milles was a man of most kindly and sympathetic disposition; no trouble was too great to help a friend or patient, and throughout his life he was a great favourite with all with whom he came in contact. Enthusiastic in his work, gentle in his manners, sound in his judgment, and without any self-conceit, he was one of the best types of medical men, and his loss will be much felt among his large circle of acquaintances.

He leaves a widow and three children to mourn their loss.

HUGH RICHARD KER, F.R.C.S. EDIN., L.R.C.P. EDIN., M.R.C.S. ENG.

THE death of Mr. H. R. Ker, which took place at his residence, "Tintern," Balham Hill, where till recently he was in practice, will leave a gap in his district.

He was one of the old school of practitioners who began their professional careers under the apprenticeship system, was educated later at Guy's Hospital and qualified in 1871 as M.R.C.S. Eng., obtaining the Fellowship of the Royal College of Surgeons of Edinburgh in 1880. For a time he acted as clinical assistant at the Evelina Hospital for Sick Children. He was a Fellow of the Royal Society of Medicine and the Medical Society of London, a former Fellow of the Obstetrical Society, and ex-President of the South-West London Medical Society and of the Midland Medical Society. In the earlier years of his professional life he practised in the Black Country, where he gained reputation as a surgeon and an obstetrician. After a successful career in the Midlands he came to London and settled in partnership at Balham about 25 years ago. Here he rapidly came to the front and enjoyed a large practice. His varied experience stood him in good stead, and he was always ready to take charge of any case which fell to his care with sound judgment. He dealt with medicine, surgery, obstetrics, and gynæcology with the confidence and success of the old school from which he came. In Balham he was well known and much liked by his patients, to whom he was a kind and skilled adviser, never sparing himself trouble, and always ready to render assistance at any hour. He will be much missed among his friends and patients.

JOHN McILROY, M.D. R.U.I., J.P.

WE regret to announce the death of a well-known Belfast practitioner, Dr. John McIlroy, which occurred on Nov. 20th at his residence, York-street, in that city. Dr. McIlroy, who was in his sixty-sixth year, had been in failing health for the past six months, but was able to attend to his practice until four weeks ago. A county Londonderry man, born in Kilrea, Dr. McIlroy went to Belfast in the "seventies" of the past century, and studied at Queen's College. In 1876 he obtained the L.F.P.S. Glasg., in 1882 the L.R.C.P. Irel., and in 1883 graduated M.D. of the Royal University, taking the B.A.O. ten years later. Settling down in the north end of the city of Belfast, Dr. McIlroy rapidly acquired by his ability, care, and attention a large practice. He was greatly liked and trusted by his patients. He was medical referee for the Prudential Assurance Company, and surgeon to the Midland Railway Company and to the Clyde Shipping Company. He was a justice of the peace for the city of Belfast and a member of the city council, having in 1909 been elected a councillor for one of the wards, and he held his seat until his decease.

Professor G. Sims Woodhead, M.D., will open a discussion on Preventive Inoculation at the Royal Sanitary Institute, 90, Buckingham Palace-road, on Tuesday next, Dec. 8th. The chair will be taken at 7.30 P.M. by Sir Shirley Murphy.

THE WAR.

THE DISTINGUISHED SERVICE ORDER.

IT was announced by the War Office on Dec. 1st that His Majesty the King (who was then with his troops at the front) had approved the appointment of 58 officers to be Companions of the Distinguished Service Order, in recognition of their services with the Expeditionary Force. The list includes the names of three officers of the Royal Army Medical Corps, whose services entitling them to this distinction are officially described in the following terms:—

Captain James Stuart Dunne:

> During German attack on night of Oct. 31st, near Messines, he established a dressing station just behind the trenches, and was the means of saving many lives, he himself going several times into the trenches to attend to wounded men who could not be moved.

Captain Sidney John Steward:

> Went with party of stretcher-bearers across ground swept by rifle and shell fire to Langemark village and removed 11 wounded men.

Captain Patrick Sampson:

> Has shown frequent and conspicuous gallantry throughout the campaign, especially on Oct. 21st and 22nd, attending wounded men under very heavy shell fire.

THE CASUALTY LIST.

This week we have to record the death of the three medical officers serving in H.M.S. *Bulwark*, who are officially stated by the Admiralty to have been on board the ill-fated battleship when she was blown up on Nov. 26th at the mouth of the Medway. The names are: Fleet-Surgeon Percival Kent Nix, R.N., Surgeon William Miller, R.N., and Surgeon Robert Traill Brotchie, R.N.V.R.

The following casualties among officers of the Royal Army Medical Corps and the Indian Medical Service serving with the Expeditionary Forces have been reported since our last issue:—

Died of wounds: Major Edwin Bedford Steel, R.A.M.C.

Missing: Captain H. G. Robertson, R.A.M.C.

Captain A. M. Rose, R.A.M.C., previously reported wounded and missing, and Lieutenant H. G. Winter, R.A.M.C., and Lieutenant J. L. Jackson, R.A.M.C., previously reported missing, are now unofficially reported prisoners of war.

Lieutenant N. M. Mehta, I.M.S., previously reported missing, has now rejoined the British force operating in East Africa.

ADMISSIONS TO THE MILITARY HOSPITALS.

The relative proportion of sick and wounded admitted to the Military base hospitals will probably vary considerably from time to time. This is shown by the experience at the Third London General Hospital. During the heavy fighting in Northern France and in Belgium a large number of wounded were admitted and very few sick, so much so that the wards which were intended for purely medical cases were occupied to a large extent by surgical cases, and the services of the physicians were used in attendance on those men who were lightly wounded. Since the lull in the fighting and the onset of cold and damp weather a larger proportion of sick have been sent from Belgium, and the medical wards have again reverted to the sole care of the physicians. The cases for the most part are of a slight nature, subacute rheumatism preponderates, with a certain number of men suffering from slight bronchial catarrh.

FIELD SURGERY AND TRENCH HYGIENE.

We would particularly draw the attention of our readers to the full report which we print this week in our Parliamentary Intelligence of the contribution by the Under Secretary of State for War, Mr. Tennant, to a discussion in the House of Commons on the treatment of the wounded in the war, and to his concluding remarks on the efforts which have been made to ensure hygienic conditions for our brave soldiers in the trenches. With regard to the arrangements for the treatment of wounded men at the front Mr. Tennant pointed out that while everything possible is being done to secure that effective treatment is carried out with the least possible delay, the actual moment at which the wounded can be removed from the firing line must be largely determined by military exigencies. Thus the question of the promptness or otherwise of surgical treatment is really more a military than a surgical question. The public generally will be relieved to learn, on the positive assurance of the Under Secretary for War, that the Royal Army Medical Corps possess at the present time ample numbers of officers and men, and that there is a sufficient supply of trained nurses at the clearing stations to which our wounded are taken from the first-aid posts on their way to the base.

The statement, repeated in the most explicit terms, that there is an ample supply both of personnel and of matériel for the medical needs of the Expeditionary Force will bring relief to a great many minds. Mr. Tennant spoke in the warmest terms of the skill and devotion of all ranks of the Royal Army Medical Corps, and acknowledged the value of the services of those distinguished members of our profession who have left their civilian duties in order to advise and assist the medical military authorities at the front. As our readers will have judged from the interesting report on Gas Gangrene by Sir Anthony Bowlby and Dr. J. Sydney Rowlands which we published last week, bacteriological investigations made on the spot by expert workers are already yielding useful fruit, and will no doubt contribute more and more in the future to the prevention and early treatment of wound infections and to the maintenance of the general health of our troops. It is very satisfactory to learn in this connexion that the Royal Army Medical Corps is working in close touch with such centres of scientific investigation as the Lister Institute and the Research Committee set up under the National Insurance Act. The fact that these two institutions are likely to remain separate and distinct, at least for some time to come, will not in any way impair the services which each can render to the public and to those who are heroically fighting in its defence.

With regard to hospital trains on the other side of the Channel and to transport of the wounded generally, it seems fairly clear that conditions have improved and are improving. As we pointed out two or three months ago, when rumours were rife of a medical breakdown at the front, the circumstances of a prolonged and rapid retirement of an army such as occurred in the retreat from Mons rendered field surgery, except of the roughest character, a matter of most extreme difficulty. At such a time the best-laid plans break down, and in the face of military emergencies medical organisation of a field force for the moment falls to pieces. When we look back with our present knowledge upon the events in France of the last days of August we realise the almost impossible task of the Royal Army Medical Corps, and are thankful that things were not a great deal worse. Now that the Western military situation has settled down more or less into an affair of fixed trenches, the arrangements for early and efficient treatment of the wounded have steadily improved.

Now while the surgical and administrative arrangements for dealing with those who have already fallen in battle appeal more directly to the mind and the imagination, we must not forget the enormous importance of sanitation. As winter advances the problems of trench hygiene become more difficult and more pressing, but we are glad to learn from Mr. Tennant and through private sources that these problems are being tackled with the utmost skill and energy. The evidence up to the present is that the health of our troops in the field is being maintained in a satisfactory manner, and that foresight is being exercised in every direction to minimise future risks. We are confident that the Sanitary Committee which has been sent out to the front to prepare the ground for the work of divisional sanitary companies and to advise the military authorities generally, will prove of the greatest value to our forces. The reason for not publishing in any detail the steps taken to preserve the health of British soldiers at the front will appeal at once to our readers. We do not wish to make a present to the enemy of our own carefully thought out and practically tested methods of trench sanitation. The fact that there have so far been very few cases of enteric fever in circumstances which are wholly favourable for the spread of this disease bears testimony to the excellent medical arrangements in the army. The very large proportion of men who have undergone antityphoid inoculation before proceeding to France and Belgium no doubt accounts to a considerable degree for our freedom from this curse of armies, but it would be too much to expect that this measure alone without the most vigilant attention to sanitation would be enough. The action of the joint committee of the British Red Cross Society and the Order of St. John in making this week an immediate advance of £10,000 for the assistance of Belgian soldiers at Calais suffering from enteric fever indicates that the Belgian army in the field is now threatened with a typhoid epidemic. How serious the situation may be we are not in a position to say at present, but we feel confident that even if such an epidemic spreads among the Allies who are operating in the neighbourhood of the British army the measures which are being taken to protect our own troops will not prove in vain.

The Care of the Belgian Wounded.

Our Special Sanitary Commissioner gives below an account of the machinery, official and private, which has been employed in the succour of the Belgian wounded in this country.

British Help for the Belgian Wounded.

It will be remembered that the first organised attempt to assist the Belgian refugees, was done entirely by private enterprise. Only after close upon 8000 refugees had been provided for and some hundred thousand letters received, did the Government come to the rescue and convert the War Refugees' Committee into a new official department under the Local Government Board. While the women, children, the civilian population, flying from the devastation of their homes and country had thus been provided for, we had not yet realised that, as nearly the whole of Belgium was overrun by the invaders, there could remain no efficient provision for the wounded Belgian soldiers. Not only was the Belgian military medical service shattered and scattered, but, as the Germans occupied all the important towns of the country, they were in possession of all the large hospitals. Antwerp and Ostend alone remained, and it was not likely that the Belgians would retain their hold on these towns for long. Even if the Belgians continued to hold Antwerp, the most they could do in their overcrowded hospitals was to attend to severe cases. To make room for these the convalescent should be sent away at the earliest date. It then occurred to a group of men on the spot, Dr. G. B. Clark being prominent among these, that we should receive in England the convalescent, and, if necessary, the wounded Belgian soldiers in the same manner as we were already receiving the refugees—namely, as guests of the nation. Even if the wounded could still be treated at Antwerp and Ostend, their homes had been destroyed, and they had nowhere to go when convalescent.

Flight of the Wounded from Antwerp.

In the hope that action might be taken in England the British Red Cross was approached. The necessity of such action was readily acknowledged, but the mission of the British Red Cross was to attend to the British wounded, and they hardly felt justified in interfering with Belgian affairs. If, however, anyone else could do so they would gladly help and subscribe £1000 towards the expenses. Further, if a committee was formed for that purpose Sir Rowland Bailey, C.B., of the Red Cross Society, consented to be a member. In this manner the Wounded Allies Relief Committee came into existence. The *Daily Chronicle* and the *Observer* each gave £1000 out of the money already collected for the Belgian refugees. Thus there were £3000 to start with, and, of course, larger sums have come in since. A strong committee was formed, including some distinguished Belgians, such as Senator La Fontaine, the Bishop of Birmingham, Lord Onslow, Lord George Hamilton, and Sir William Collins. Count de Lalaing, the Belgian Minister, frequently attends the committee meetings to advise and assist on behalf of the Belgian Government. Mr. R. C. Hawkin is acting as honorary secretary, and the Hon. Mrs. F. Guest and Mr. T. O. Roberts as honorary treasurers. After making some preparations in England for the reception and care of Belgian wounded, Dr. Clark and his son, Dr. W. Clark, went to Antwerp to bring over to England a first batch of 50 convalescent wounded. By that time, however, the town was in such danger of being captured by the Germans that most of the convalescent had already been removed. It was thereupon arranged to take away 50 soldiers from the military hospital who were not quite convalescent. But events marched too rapidly even for this modest plan to be realised. On Saturday, Oct. 3rd, the quay at Antwerp was in a state of terrible confusion, and the agent of the Great Eastern Railway Company had received orders to allow French and British subjects only on board. The Belgians, being in their own country, were supposed to be able to take care of themselves—a somewhat harsh conclusion if we remember how very little of that country remained to them. Further, it was announced that the boat might start at any moment. Therefore it was no longer possible to take the 50 Belgian soldiers over. Fortunately the evacuation of the wounded from Antwerp had been pressed forward for more than a week previously, while the road by land along the coast was still open.

Wholesale Rescue Work at Ostend.

The members of the committee then secured premises for a hospital at Ramsgate, and sent Dr. W. Clark and Dr. W. A. Brend to Ostend, where they arrived just before the fall of Antwerp. Here they were met by Surgeon-General Meleiss and Inspector-General Derache, of the Belgian army, who were the more perplexed over the presence at Ostend of 10,000 wounded, as 3000 additional wounded were announced to arrive on the morrow. The state of affairs at that time was appalling beyond words. Some 1500 wounded were crowded into the Palace Hotel, though there were but 350 beds in the place. Every available space and even railway sidings were taken up by the wounded. There were very few surgeons present or trained nurses and hardly any medical stores. Some Sisters of Mercy, very devoted but very ignorant, wanted to remove bandages to show the severity of the wounds, hoping to excite commiseration but ignoring the danger of septic poisoning. The supply of antiseptics was exhausted. This terrible state of affairs was met by Mr. Hawkin, by prompt communication with the War Office, the Admiralty, and the Red Cross Society. The committee also sent telegrams to the mayors of a number of large towns asking if they would undertake to receive batches of 50 wounded Belgian soldiers and see that they were properly treated in the local hospitals. Most of the mayors readily assented, and the Admiralty, on its side, promised to send five transport ships in 36 hours. The next day members of the Wounded Allies Relief Committee were back in Ostend with the good news that help was coming; but there was some delay, for the *Copenhagen* and the *Munich*, of the Great Eastern Railway Company, did not arrive until the Belgian army, in view of the rapid advance of the Germans, had already evacuated Ostend. There was the greatest difficulty to find ambulances or stretcher-bearers to bring the wounded to the boat. At length the *Copenhagen*, with 480 Belgian and 68 British wounded, sailed. The *Munich* was at once berthed in her place, and was also quickly filled up with victims of the war. These boats went to Folkestone, where the naval and military authorities helped to disembark their melancholy freight of passengers. One ambulance train was then and there filled up with 450 wounded and sent off to the north of England under the care of Dr. W. Clark. During Oct. 13th, 14th, and 15th the Admiralty transport ships were busily engaged bringing to Dover the wounded from Ostend. Altogether, from Oct. 12th to 15th some 12,000 wounded were conveyed to these shores.

Private Help Harmonising with State Help.

That all this should have been done between Oct. 10th and Oct. 15th conveys the useful teaching that war leaves no time for preparations, and disaster must result if these are not taken in hand well in advance. The Wounded Allies Relief Committee had made some preparations and were able to place 1500 patients upon landing. The greater number, however, had to be taken over by the military and naval authorities and by the Voluntary Aid Detachments of our Territorial Army. But the latter also were not all ready for this work. In several instances the Wounded Allies Relief Committee gave them instruments, furniture, and various necessary things to convert into suitable hospitals the halls or other premises they hastily secured. But altogether very efficient aid has been given to the wounded of the heroic Belgian army. At the present moment some 18,000 wounded Belgians are actually under treatment in England. But would this help have come in time and proved as efficient had it not been for the initiative, the enterprise, and the early warning given by private individuals? On the other hand, both the War Office and the Admiralty are to be congratulated for having followed the example of the Local Government Board, by fully availing themselves of the intelligent services organised by private enterprise and paid for by voluntary contributions. This welding together of the official with the unofficial is a delicate matter, as anyone with the slightest experience will not fail to acknowledge. But it has to be done, for this is a time when all the vital forces of the nation must be utilised.

AN "OPEN LETTER" FROM HAMBURG.

The following is a translation of an "open letter to the medical profession of England" which has been received *viâ* Rotterdam by some medical men in London holding official posts:—

It has been established beyond all doubt, not by rumours, but by authentic depositions, that numerous defenceless and blameless Germans have for months been confined in so-called concentration camps in various places throughout England. On the Newbury racecourse, for instance, there are some 1500 Germans huddled together in such a fashion that six and eight and recently even 12 individuals live and sleep in a three metre wide draughty stall, which in ordinary times serves for a single horse. The sole furniture of this horse-stall, now used as a shelter for human beings, consists of some straw and two coverlets for bedclothes. There is neither table nor seat; opportunities for washing are got from a pump in the court. The prisoners have to cook their own food on open asphalt floors. The menu consists of tea, with one piece of white bread and margarine, morning and evening, and one piece of meat and two potatoes in the middle of the day. Owing to delay in supplying fuel, however, the midday meal is often delayed to 6 o'clock, and, still more often, the meat runs short, or both meat and potatoes are not edible, so that some of the prisoners refuse them and are forced to go hungry. To add to their cup of misery, want of ordinary hygiene has recently resulted in their being unable to keep themselves and their abodes free from vermin. Complaints are useless; in fact, when repeated they cause stricter measures to be taken, such as confinement in small tents erected on clayey meadows and surrounded by water ditches. No attempt is made to discriminate between different degrees of social standing and education. Thus, since Sept. 11th six physicians have been interned at Newbury, a number lately increased to 13. Requests in writing from these medical men, who are willing to interest themselves in the work of English hospitals, have not received any attention. The Medical Society of Hamburg knows that it is in accord with the whole medical profession of Germany in raising an earnest and vigorous protest against these happenings before the medical fraternity of the whole civilised world.

The above described confinement and treatment of German physicians, who consider it their chief duty in this war, as always, to ensure that friend and foe alike receive medical care, stand in flagrant contradiction to the recognised regulations of the Geneva Convention, accepted by Great Britain, and can have only one result—viz., the withholding from the sick and wounded of a certain amount of skilled attention and so of a chance of relief.

In the name of the physicians of Germany, further, we must protest against the unhealthy concentration of the other German subjects in these camps. The hygiene, shelter, position, provisioning, and cleanliness are such as to awaken nothing but scorn in these men's minds, and seem to reveal an intention on the part of the administration to make defenceless and harmless individuals run the risk of sickness and injury simply because they are Germans.

This fight against the unarmed will not have the slightest effect on the outcome of the war of the nations. Just as Germany is prepared, without one moment of hesitation or faintheartedness, to offer up thousands of her finest men for the honour of the fatherland and for the preservation of her own Kultur, so will she bear this fresh sacrifice, forced on her by caprice and cruelty. She will hold these blameless people who sicken or die like martyrs for Germany's sake and blood witnesses of the level of British morality, as heroes, and honour them as she does her warriors.

The medical profession of England, however, the educated and intellectual leaders of the nation, who in common with the medical men of all countries have, at numerous international congresses—such as the recent Congress of London and the Tuberculosis Congress in Berlin—laid stress on and praised humanitarianism as the chiefest duty of the physician and the highest acquisition of modern Kultur, are in duty bound to redeem their pledges; it is theirs to curb the passions of the populace and as far as they can to prevent the Government from despising that humanity which is recognised in the statutes of all civilisations. The Medical Society of Hamburg therefore requests the physicians of England, as a matter of duty and honour, so to influence the Government as to procure the release of the German doctors and the establishment of hygienic conditions of life in the concentration camps, unless they would, like their Government, bear on their brows the eternal brand of shame.

We await from the medical profession of England an exoneration of themselves in the eyes of the medical profession of the whole world.

Professor BRAUER. Professor NOCHT.
Professor DENEKE. Dr. OEHRENS.
Dr. MARBEN. Professor RUMPEL.
Dr. MARR. Professor SIMMONDS.

Hamburg, Nov. 3rd, 1914.

First-hand investigation of the Newbury Camp contradicts every statement in this open letter. We do not suppose the signatories believed their own words, but they have none the less sent them out in the hope of damaging our national character. We oblige them by publishing their communication knowing that its untruths will be transparent.

THE KING GEORGE HOSPITAL.—The new war hospital for London, an adaptation of the Stationery Office in the Waterloo-road, is being rapidly proceeded with. It will be known as the King George Hospital, and will contain 1500 beds. These will be distributed upon five floors, each storey being completely and separately equipped and staffed. The internal arrangement of the building presents, we understand, no great difficulties, as the provision for lighting, heating, and ventilation is adequate, and there are already lifts. The honorary staff will be drawn from the principal physicians and surgeons in London who are available. A long list of donors of £25 each for the endowment of a bed has been issued. The King has endowed 4 beds, the Queen 2, Queen Alexandra 1, Princess Victoria 1, Princess Christian 1, Queen Amelie of Portugal 1, and the King and Queen of Portugal 2. Cora Countess of Strafford (6), Mrs. Cornelius Vanderbilt (4), and Miss Adele Colgate (2) have given 12 beds to be placed in one ward, Messrs. Courtaulds, Ltd., 10 beds, A. E., 6 beds, and E. S., 5 beds. There are several donors of 4, 3, and 2 beds respectively, while the list of donors of one bed amounts already to 861 names.

WAR AND THE GERMAN MEDICAL PROFESSION.—A correspondent in Switzerland sends us the following notes on medical affairs and opinions in Germany which he has gleaned from German professional journals: "Ten of the new professors in the University of Berlin have been called to the front, but the well-known names of Quincke and V. Noorden appear as lecturers on medicine, and 80 medical students were enrolled up to Nov. 4th. In Berlin, in spite of the rush of medical men to the front, those remaining have less to do than usual. This is ascribed to the previous overstocking of the city in medical talent, and also to the fact that minor ailments have practically disappeared during the war, which has produced among the civil population an 'ability for self-control which will have permanent moral value.' The complaint is freely made that many who remain might be at the front, where many older men were sent in the hurry of the first mobilisation. In East Prussia there is a great scarcity of doctors, and a retaining fee of 25 marks a day is being offered to any who will volunteer. Advertisement is not entirely unknown even under the present conditions of national enthusiasm, and a 'specialist for diabetes' states that, 'contrary to rumour, he has not gone to the front.' The War Office also complains that offers of doctors volunteering for war service are often associated with so many conditions as to be practically worthless. In Vienna the principal building of the University has been turned into an accessory hospital, and the various faculties have had to find other accommodation.

Signs of a more generous reaction from the extreme patriotic feeling at the onset of the war have shown themselves in Germany, and Professor Orth publicly disagrees with the proposed future exclusion of foreigners from working places in the universities; while Professor Waldeyer, the senior of the medical faculty of Berlin, comments unfavourably on the surrendering of foreign medals and of carrying the war spirit over into peaceful fields. The family of du Bois Reymond surrendered his gold medal to the War Victims Fund, in the sense, however, 'of finding no higher imaginable honour for it.' E. von Behring, who surrendered his Harben medal, writes, on the other hand, to explain that his article to celebrate Metchnikoff's seventieth birthday was not withdrawn, but is to appear in another form. Bitter complaint is raised regarding the 'piracy' of German drugs in England and America, especially in regard to salvarsan. The editor of the *Deutsche Medizinische Wochenschrift* is able, however, to console himself with the reflection that the result of salvarsan 'made in England' will be to produce a new 'English disease' which will take a permanent place in English medical literature (it may be recalled that rickets is at present known in Germany as the 'English disease'). A combination of the firms Merck, Böhringer, and Knoll is to manufacture tablet drugs to replace English and French goods.

The *Münchener Medizinische Wochenschrift* quotes its Rome correspondent as saying that no Belgian or French journals had been received since the beginning of the war, and that THE LANCET and the *British Medical Journal* had been received very late and in a much reduced compass, contrasting with the punctual incidence and slighter decrease in volume of its own numbers, and deducing the greater resistant power of Germany to the disturbing influence of the war. The comparison does not, however, hold good, as, comparing at random the second July number with the third October number of the three journals, the German journal was reduced 40 per cent., the *British Medical Journal* 38 per cent., and THE LANCET 29 per cent. only."

EDINBURGH ROYAL INFIRMARY AND THE WAR.—Mr. G. L. Crole, K.C., who presided at a recent meeting of the infirmary managers, referred to the part that the institution was playing in connexion with the war. In addition to providing medical and surgical attendance for the wounded soldiers and sailors, they were doing a large work for the military authorities by practically staffing the military hospital at Craigleith. Sir Joseph Fayrer, their superintendent, was the commandant of that hospital, and with one or two exceptions the medical and surgical staff were all members of their staff. The nursing staff, too, had been largely recruited from the infirmary, 14 having taken service at Craigleith. Three of their assistant surgeons were at present in France, having received leave from the managers to assist in the care of the wounded there. He hoped that the public would take note of these facts and give increased support to the infirmary, which besides its civil duties was doing much in connexion with the care of the wounded.

RED CROSS HOSPITAL IN DUBLIN.—Through the kindness of the Lord Lieutenant, and with the cordial approval of the King, an alternative scheme to that mentioned in THE LANCET last week (p. 1278) for the establishment of a Red Cross hospital in Dublin for wounded soldiers has been rendered possible. His Excellency, with His Majesty's approval, has placed the State apartments of Dublin Castle at the disposal of the City of Dublin Branch of the British Red Cross Society for the accommodation of wounded soldiers. The premises have been inspected by competent medical and engineering authorities and are said to be suitable for the purpose. Very slight structural alterations are required, and there is room for about 450 beds. The scheme will certainly appeal to the public more effectively than that previously outlined. A public meeting in support of it was held at the Mansion House last Monday, under the presidency of the Lord Mayor, and gratifying support in the way of subscriptions was received. It is estimated that a sum of £10 per bed will be required for equipment, or about £5000 in all. About one-fourth of this sum was promised by those present at the meeting. The scheme of management is business-like. There is to be a committee of 20, of whom 10 have been elected by the subscribers, and the other 10 are to be nominated by the medical staffs of the ten clinical hospitals. By this plan the support of the business community and the coöperation of the medical profession of Dublin can be secured. The cost of maintenance will be met by a capitation grant from the War Office. The matronship of the hospital has been accepted by Miss MacDonnell, who had many years' experience as matron of the House of Industry Hospitals in Dublin, and was matron of Lord Iveagh's Irish Hospital in the South African war. No better appointment could have been made.

AUSTRALIAN PRACTITIONERS AND THE WAR.—Our own Correspondent writes: "The medical interest in the European war still continues active. Volunteers were called for to fill the positions in the hospital equipment to be maintained by the Commonwealth Government, and the 100 medical men asked for were many times over available. There are to be two stationary hospitals of 500 beds each, and these will be under the command of Lieutenant-Colonel Ramsay Smith, M.D., of South Australia, and Lieutenant-Colonel T. E. Martin, M.D., of New South Wales. The staff of the first will include Dr. G. A. Syme (Hon. Lieutenant-Colonel) and Dr. H. Maudsley (Hon. Lieutenant-Colonel), of the Melbourne Hospital; Dr. T. P. Dunhill (Hon. Major), of St. Vincent's Hospital, and Dr. S. Argyle (Hon. Major), of the Alfred Hospital. Dr. E. S. Jackson and Dr. J. B. Maclean, of Queensland, will rank as Hon. Majors, as also Dr. J. W. Barrett of Melbourne. Major B. T. Zwar, of Melbourne Hospital, will join the stationary hospital. The senior members of the second hospital staff will be Dr. J. B. Nash (New South Wales) and Dr. J. W. Springthorpe (Victoria), Hon. Lieutenant-Colonels, and Dr. W. H. Read, Dr. W. C. Grey, Dr. P. A. Carter, and Dr. J. M. Stewart as Majors.

Apart from the Expeditionary Forces, many medical men have volunteered for garrison work, and have given service with various troops detailed for coastal defence. Much of this work is no sinecure, as some of the channel ports are of very contracted area, and a fortnight's detention in mid-channel of Hobson's Bay offers no special attraction apart from a sense of duty done. The health of the Expeditionary Forces has been generally good, but there has been a fair amount of influenza and several cases of pneumonia, and measles has also claimed some attention."

THE ETIOLOGY AND PROPHYLAXIS OF TETANUS. Dr. Albert Wilson, who has been serving with the French Army at a military base hospital, sends us the following abridged translation of a recent paper by Dr. Walther in *La Presse Médicale*:—"Out of one group of 135 wounded French there was not a single case of tetanus. Among 270 wounded Germans there were 19 cases. In one case it was a bullet wound; in the other 18 *éclat d'obus*, i.e., shrapnel. All had been wounded on Sept. 6th, 7th, or 8th at the battle of Marne, chiefly on the plateau of Barcy. They had been left behind in the ambulances by the retreating Germans, and received neither food nor care for three days. Rescued by French troops, they arrived at Val-de-Grâce on Sept. 11th to 14th. They had large infected and gangrenous wounds. Out of 51 French wounded in the Hospital de la Pitié there was one case. He was wounded at Soissons on Sept. 15th. He had an injection the same night of antitetanic serum. On the 24th he had trismus, convulsions, &c., and died the same day. One of the Germans received on Sept. 13th was already in tetanus and died on the 14th. Of the 19 cases the incubation period varied from 6 to 16 days; 5 were 8 days and 5 were 9 days. Those who had a short incubation died rapidly and *vice versâ*. In these there was trismus, dysphagia, profuse salivation, tonic contractions with clonic crises, but no great rise in temperature. The treatment consisted in large doses of chloral, hot water in rectum, chloroform, injections of analgesine and antitoxin 20–60 c.c., sometimes intravenous. Out of 20 cases which had prophylactic injections of 10 c.c. one case developed tetanus the next day."

GERMAN SURGEONS AND THEIR WOUNDED.—The German medical papers are naturally largely occupied with the treatment of wounds. Some idea of the magnitude of this task may be gathered from a communication of Excellenz von Schjerning from the front, stating that 9000 doctors are in the field, and that in one week from the western field of war alone 40,000 to 50,000 slightly wounded soldiers were sent home—i.e., omitting the severe and fatal wounds. The emergency dressing of vioform gauze supplied to the soldiers is reported to be very satisfactory on the whole. In one instance only three out of 400 wounded showed any sign of suppuration after 50 hours or more in an ambulance train. The proportion of bullet wounds is strikingly greater than that reported on the side of the Allies; in some cases three-quarters of the wounds were due to this cause, and only a quarter to shrapnel and shell injuries. The question of explosive bullets is abundantly discussed, and in many articles in the German medical journals their use is considered proven by the occurrence of a small entering puncture and a large wound of exit. For the most part the bullet itself is missing or has been extracted before coming under the surgeon's notice, but a certain number of illustrations of spread bullets are given, all of which, it may be observed, are diagrams and not actual photographs. More recently articles have appeared describing the explosive action of the German infantry "S" ammunition at short range. Professor Nippe (Königsberg) has described some striking examples at 10 metres distance where whole vertebræ were comminuted. But perhaps the most interesting note is taken "from the private letter of a prominent Swiss University teacher" stationed at Strasburg, who is doubtless the well-known surgeon Sauerbruch, of Zürich. He writes: "The question is undoubtedly hard to decide *as the appearance of the wound affords no proof of dum-dum*, a fact which I can confirm by personal observation of French soldiers who have been struck by German bullets. Besides this, I have seen a German steel-mantled bullet so spread and transformed by traversing an obstacle as to suggest dum-dum." Professor Schlange, attached to the 19th Army Corps, also states that infantry wounds at 100 metres gave the impression of dum-dum, but were really due to shortness of range; and Professor Köhler (Berlin) speaks of the hydrodynamic action of bullets at short range, whilst at a very great distance there is again a tendency to produce large irregular wounds. The latter effect occurs with especial frequency with modern pointed bullets, which have a tendency, even with very slight resistance, to oscillate and turn broadside on. These authoritative statements may be considered practically to settle the question of dum-dum on the German side, except as a political weapon.

In discussing the effect of ordinary bullets, Köhler considers that on the whole the modern bullet does not differ much from the older blunt one, except in the smaller effect when only soft parts are struck; in this case the soldier is put out of action for such a short time that a further "reduction of calibre below 8 millimetres is not advisable." Whilst ordinary septic infection has been rare in the case of bullet wounds, more serious infections have often been observed with the extensive injuries from shells. In these a rapidly spreading "gas-phlegmon" was at first frequently observed, with a mortality of 85 per cent. The suggestion of Müller (Rostock) to treat these with subcutaneous injections of oxygen gas is said to have markedly reduced the mortality. For the avoidance of anaerobic infections in general hydrogen peroxide is widely recommended, especially in the solid form, which can be powdered on the wounds like iodoform. The perhydrit of Merck and the pergenol of Byk have proved convenient forms. The other serious anaerobic infection, that of tetanus, although not occurring in a large percentage of wounds, has had a high case mortality, and its treatment occupies a large place in the columns of the papers. There has been up to recently a lack of sufficient antitetanic serum, regarding the utility of which when available there is practical unanimity. Von Behring states that 20 c.c. are generally sufficient for preventive treatment, whereas after spasm has occurred at least 100 c.c. should be given intravenously, and if this is ineffective an injection into the nerve trunks from the infected part after dissecting these out. Intradural injection is not sufficiently warranted in theory or in practice. Kocher (Bern), amongst others, warmly recommends the routine trial of $MgSO_4$ injections to mitigate the spasm, but only subcutaneously; and this drug is generally combined with morphia. More potency has been ascribed to luminal, a phenyl-veronal derivative manufactured by Bayer. At the naval hospital in Hamburg great success has attended in several cases the combination of antitoxin with salvarsan. Alternative methods of treatment have a heightened importance by reason of the limited supply of antitoxin available.

For the treatment of ordinary wounds an economy in dressings is urgently recommended, and to this end mastisol has been largely employed to fix the dressings and so avoid the use of bandages. Mastisol, introduced some years ago by Dr. von Öttingen, is a Berlin proprietary preparation consisting of a solution of mastic and other resins in benzol, with the addition of a small quantity of an ester and some colouring matter. A high pharmaceutical authority recommends its replacement with dammar dissolved in benzine at less than one-fifth the price. The resin lodges in the pores of the skin and is supposed to prevent the cutaneous organisms from coming out and infecting the wound without the disadvantage of sealing it completely as collodion would do. Instead of cotton-wool, the supply of which is strictly limited, wood-wool is largely in use, and the tide has turned in favour of the use of charpie (which has been ascertained to take up six times its weight of fluid), so long discarded, enclosed in gauze bags and carefully sterilised. For infected wounds roasted sawdust and peat moss are also in use, except where the open treatment is available as at a base hospital. In septic wounds the internal use of mercury has many adherents.

ASIATIC CHOLERA IN AUSTRIA.—The epidemic of cholera in Austria is on the increase, and has now attacked the inhabitants as well as the soldiers. 844 cases in Austria and 532 cases in Hungary were officially announced in the week from Nov. 1st to Nov. 7th, says one of our occasional correspondents. The mortality of the Austrian cases was 331, or a percentage of nearly 40. In Vienna 90 cases were notified, in Galizia 584 cases. During the previous fortnight, according to the *Bulletin Sanitaire Suisse*, 983 cases of cholera were notified in Austria and 609 cases in Hungary, making a total of 1592. Adding to these figures those for the first week of November we obtain a grand total of 2968 cases notified in the Dual Empire in three weeks.

Vacancies for Medical Officers.—We are asked to announce that the 2nd Northumbrian Field Ambulance, R.A.M.C. (T.F.) is urgently in need of medical officers for the reserve unit. There may be one or two vacancies in the foreign service unit for officers desiring to go abroad. Officers joining for the period of the war only will receive £30 outfit grant, and those joining as ordinary Territorial officers will receive £40. The pay on joining as lieutenant is 14*s.* a day, plus field allowance of 3*s.* a day while under canvas. Applications should be sent to Lieutenant-Colonel D. A. Cameron, commanding 2nd Northumbrian Field Ambulance, R.A.M.C. (T.F.), Bensham, Gateshead.

The British Fire Prevention Committee and the War.—This committee has been largely engaged during the past three months on work connected with the war emergency. Its well-known series of "Fire Warnings" has been extended to meet the special circumstances of the present time. Thus the distribution of the "Warning" dealing with the necessary fire precautions in military hospitals already exceeds 10,000, while abbreviated French and Flemish translations are provided in the form of short notices for Belgian wounded. To meet the fire danger due to the great influx of refugees, many of whom are not familiar with the English open fire, gas lighting, or electricity, a special "Warning" was issued for refugee homes and hostels, and this was also published in French and Flemish. The necessity of conserving all agricultural produce led to a further "Warning" being issued as to fire precautions for farmers. The committee also organised a special fire survey force which is doing a considerable amount of survey work in connexion with Government establishments, and particularly in connexion with hospitals for the wounded. Further, to meet the emergency of the depletion of actual fire brigade and watching staffs, a special fire service was formed with Lord Londesborough as honorary commandant, comprising 300 fire brigade officers, patrolmen, and firemen, divided into sections available for mobilisation at 48 hours' notice. A technical inquiry office has also been formed. The British Fire Prevention Committee is thus devoting the results of its experience very largely to national purposes without interrupting to any considerable extent its ordinary duties.

The American Women's Hospital, Paignton.—This institution has now been opened for more than six weeks, during which time over 400 wounded soldiers have been admitted, and at present there are about 160 patients in the hospital. The Queen recently paid a private visit to the wards.

Dr. Henry Jellett, Master of the Rotunda Hospital, has left Dublin to take charge of a motor ambulance with our forces in Flanders.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Parliamentary Session.

Parliament has adjourned, the House of Lords until Jan. 6th and the House of Commons until Feb. 2nd. Unless any event calling for the urgent attention of Parliament arises in the interval—and in that case the House of Commons could be immediately summoned—the ordinary business of the session will not be entered upon until February. The attention of both Houses during the sitting just concluded has been devoted to emergency matters arising out of the war. Special statements on the military and naval situation were made by Lord Kitchener and Mr. Churchill. Mr. Tennant, the Under Secretary of State for War, made a speech to the House of Commons last week, in which he dealt with many of the problems arising out of the treatment of the wounded in the war. It is worthy of attention.

HOUSE OF COMMONS.

Wednesday, Nov. 25th.

London Panel Chemists.

Mr. Touche asked the representative of the National Insurance Commissioners why a deduction of 40 per cent. had been made by the Insurance Committee for London from the accounts of panel chemists for the month of August; was he aware that in the case of those chemists who used first-quality drugs a deduction of 40 per cent. was more than the profit made; and would anything be done to protect these men from unmerited loss.—Dr. Addison replied: The honourable Member is under a misapprehension. Any such monthly payments as those to which he refers are advances only on account of the total remuneration due to each chemist in respect of the whole year. The rate at which these advances are made is a matter for agreement between the Insurance Committee and the committee representing the panel chemists, and does not necessarily bear any relation to the actual remuneration payable.

Thursday, Nov. 26th.

Recruits and Defective Teeth.

Mr. Boyton asked the Under Secretary of State for War whether he was aware that a number of recruits were suffering from defective teeth, and, if accepted, this led to early disablement, particularly when serving at the front; and whether the War Office would appoint dental surgeons at the depôts, who would give the necessary preliminary attention to this branch of the health of the Army and Territorial Forces.—Mr. Tennant answered: I am aware, of course, that defective teeth are common amongst recruits as amongst other categories of persons. General officers commanding are already empowered to spend money on any man's teeth to fit him for service. A large number of dental surgeons and dental institutions have patriotically arranged to treat, free of charge, recruits who would otherwise be rejected on account of their teeth. I gladly recognise what has been done in this respect. Finally, dental surgeons are being appointed to all the larger military stations at home. They will devote their whole time to work with the troops.

Highlands and Islands Medical Service.

Mr. Ainsworth asked the Secretary for Scotland whether the Highlands and Islands (Medical Service) Committee had completed its report, and, if so, what was the cause of the delay in issuing it and giving effect to its recommendations.—Mr. McKinnon Wood replied: The Commissioners have submitted a scheme which is at present under consideration of the Treasury.

Treatment of Wounded in the War.

In the course of the debate on the third reading of the Consolidated Fund Bill,

Lord Robert Cecil raised questions connected with the treatment of the wounded in the war. He asked for particulars as to the steps taken to deal with them at the firing line, at the clearing station behind the firing line, and at the base hospital. Was the supply of nurses sufficient? He did not raise these matters for the purpose of criticising the Government. What he wanted was information. Amongst all the corps which had done heroic service to the State there was not any which had done more heroic service than the Royal Army Medical Corps. The courage and devotion of its members were absolutely beyond the possibility of praise. Were there enough of them?

Mr. Douglas Hall asked whether antiquated horse-drawn ambulances were still used for bringing troops from the trenches. It was all very well for Lord Knutsford to say that he had seen good hospital trains. There were good ones, but he (Mr. Hall) had seen dozens and dozens coming in in which the wounded were still lying on straw in horse boxes. A great effort ought to be made to get more hospital trains fitted up. He was told by medical men that straw was one of the worst things on which a wounded man could lie, because the germ of tetanus was a horse germ which was contained in manure, and if care was not taken to protect the men they might contract the disease through the medium of the straw. He asked if the Royal Army Medical Corps had considered the feasibility of conveying the wounded away from the front by means of barges on the canals and waterways of France? In the area of fighting there was a fine system of canals through which the wounded could be brought to Calais and Dunkirk. Barges would make an ideal form of conveyance, and eight or nine large ones, with the necessary medical men and nurses, would provide a floating hospital for over 400 wounded.

Sir Frederick Banbury said that a certain number of the wounded, after receiving first aid, had been passed on without further attention to a base hospital. In one case the wound of an officer was not dressed until the third day. The wound was slight, but a piece of cartridge cloth was found in it, and blood poisoning set in causing the officer's death. If the wound had been properly dressed he would not have died. He believed that there had been many cases of that sort. He thought that possibly that might be remedied by the engagement of a larger number of nurses and doctors as near to the firing line as possible. For some time after the war broke out there were no female nurses at the clearing hospitals. He did not doubt that the hospitals in hotels at Boulogne were very efficient, but he feared that they were not sufficient to cope with a sudden influx of wounded. There were two other hotels at Boulogne which might be taken, and also further houses.

Testimony to the Work of the Royal Army Medical Corps.

Mr. Tennant (Under Secretary of State for War), in the course of his reply, said: I now come to the question of the treatment of our brave soldiers returned from the war. May I offer the thanks of the Army Council to the noble lord for the admirable manner in which he has been discharging the most onerous duties in helping the British Red Cross Society, and may I say that I understand that a continuance of these services will be very much appreciated. The noble lord had asked me what are the arrangements for the treatment of the wounded at the front and whether immediate steps are taken upon a soldier being wounded for his proper and careful treatment. I am sure that the House will realise that that can only be answered on the supposition that military exigencies of the case admit of the men being taken away from the firing line at the moment of the injury and then treated, so that the question of the immediateness or otherwise of the treatment is really a military question and not a medical one at the moment. The noble lord has borne eloquent testimony to the wonderful courage with which the officers and men of the Royal Army Medical Corps have discharged their duties—a testimony which I am sure the House will wish to endorse—work which we in the War Office cannot praise too highly. Therefore I think we may carry some hope in our mind that everything possible is done in order that the wounded shall be treated effectively at the earliest possible moment. I should like to give the assurance to the House and to the country that we have an ample number of R.A.M.C. officers and men. The medical and surgical treatment of the troops is in very high and competent hands, as the R.A.M.C. supply a number of officers of the most highly skilled and trained character, and they produce as fine surgeons and doctors as any other branch of the medical and surgical service. We do not limit ourselves entirely to the military medical profession. We have numbers of distinguished members of the medical profession from the civil side as well, distinguished physicians with whom are associated clinical authorities. In addition to that we have bacteriologists engaged in endeavouring to solve some very, very difficult problems. In this connexion I think the noble lord will be interested to know that the wounds are inflicted almost entirely by shrapnel, and, as everybody knows, the vast majority of the wounds are wounds of an almost novel type, and nothing like them has been seen during the recent history of medical science. You have to go back to the days of the Crimea to find anything similar. In the course of the treatment of these wounds there have been differences of opinion on scientific grounds as to what the treatment should be. There is an antiseptic school and an aseptic school. The aseptic school at the beginning of the war was in the ascendant, and now we have had to go back to what was considered a rather antiquated form of treatment by many people. I do not pretend to presume to give any opinion, but the antiseptic treatment is being used so much that we are now engaged in sending out to every soldier, private as well as officers, fighting, a small amount of iodine, in order to give immediate treatment to the wounds when it is possible for the men to do this.

Mr. Douglas Hall asked whether a supply of the serums had been sent.

Mr. Tennant: I cannot answer the honourable Member just now. Nor have we limited ourselves to conducting this work in the established hospitals.

The Evacuation of the Wounded.

We have established a travelling bacteriological laboratory and also a small laboratory for sanitary purposes. Bacteriologists have been doing work which is bearing great fruit. I would like also to mention that the Royal Army Medical Corps are working in close connexion with the Lister Institute and the Research Committee of the National Insurance and other institutions. Let me deal for a moment with the question of nurses and clearing station. The honourable Member (Mr. Douglas Hall) I think made out one move more than I could account for in anything which we know of at the War Office. When a man is wounded his wound is dressed as near to the firing line as may be, and he is then taken to the clearing station and from the clearing station to the train which takes him to the base. Thus there are three moves, and not four. I think if the honourable Member has different information from that it must have been in the early stages of the war. It is perfectly true that things did occur in the early stages which, as I am sure the noble lord knows, do not occur now, and no doubt on a tremendous military occasion of the most dangerous and difficult nature which occurred in the early stages of the war that degree of precision of treatment which you can have when you have fixed trenches could not be attained under such circumstances. I feel sure that that will be fully appreciated both inside the House and outside of it. There is an ample number of nurses in the clearing station. They do not get nearer to the firing line than the clearing station. Not only is there a sufficient number, but there is a waiting list. There are in France, I may say, roughly speaking, because I am not certain of all places, nurses held in reserve.

Mr. Douglas Hall: Since when have there been nurses at the clearing hospitals?

Mr. Tennant: I am afraid that I cannot give the date. I will get the information. There is an ample number now. I should like to make it quite clear that we have an ample supply both of personnel and of material, because I have seen it stated that subscriptions are being raised in order to secure such articles as chloroform. I have here a telegram received yesterday from the honourable and gallant Member for Fareham (Mr. A. Lee). who has been doing very fine work for the State in inquiring into and reporting to us upon this very subject of the treatment of the wounded. It states: "I am informed that the St. John Ambulance Society has issued an appeal for £100,000 to purchase chloroform and other medical stores, stating that operations on our wounded are being performed without anæsthetics. Can assure you on the highest authority this allegation is totally untrue both as regards the present and the past. Suggest that it should be denied in Parliament to-day in order to allay public anxiety and to stop subscriptions to quite unnecessary fund." I think that that statement, coming from the source it does and so immediately, will carry conviction to the minds of the House. Not only are all demands complied with but they are anticipated. The next point is the removal of the wounded from one place to another and the circumstances in which it occurs. The honourable Member (Mr. Douglas Hall) asks why we have so many horse ambulances. I may inform the House that we have three horse ambulances for every seven motor ambulances. The necessity for having horse ambulances is that there are parts of the country that horses can get over and motors cannot because of the mud. You really cannot get mechanically propelled vehicles over some parts of the country which can be traversed by horses. Therefore we have horse ambulances in that proportion. We are now replacing nearly all the horse ambulances by motor ambulances from the front to the rear. It has been suggested, not in this debate but in the press, that we have refused motor ambulances. It is not true that we have refused them. All we have said is that we are not ready to accept them just now. We shall no doubt be ready and willing to accept them in the future, and we have told those kindly disposed persons who have been so good as to offer motor ambulances that if they will renew their offers in a month or two months' time we shall be very glad to avail ourselves of them. Hospital trains have been supplied and have been very much improved. I can assure honourable Members that they are very comfortable at present. Three others are being prepared. We are indebted to Lord Michelham and the Red Cross Society for these trains.

Hospital Trains.

That brings me to the conveyance of the wounded—to the question of straw and tetanus. I have a report from the honourable and gallant Member for Fareham (Mr. Lee) stating that tetanus is extremely rare in the army at the present time. With regard to straw, I think that has now been abandoned owing to the improvement in the trains which I have mentioned, but I shall make inquiries. I have never heard of the straw before.

Lord Robert Cecil: Can the right honourable gentleman give us any indication as to the time that elapses normally between the clearing hospital and the base hospital?

Mr. Tennant: That depends upon the train service. I was coming to that and the barge conveyance suggested by the honourable Member (Mr. Douglas Hall). It is very difficult to give a specific reply to the noble lord's question, because the time varies enormously: according to as and when vast numbers of troops and other necessaries are going up. Moreover, the House ought to remember that all the railroads are in the hands of the French Government, and when the honourable gentleman suggests that we should send over from here officers and men versed in railway service, that is not a possibility. We cannot insist upon the French Government taking our servants when they have their own servants there. I would ask the House to appreciate that.

Mr. Douglas Hall: What I suggested was that they should do work which certain other officers do now—that is, to keep the French officials up to the mark and to get what they want. Railway officials know much better than militia officers what is requisite to make a train comfortable.

Mr. Tennant: I am afraid we cannot absolutely insist upon the French Government accepting those whom we choose to send over. At the beginning of the war we did select certain officers who had had experience of those matters, for the most part Army Service Corps officers. They were accepted by the French Government, and are, I believe, doing excellent work now in endeavouring to expedite trains. Of course, the difficulty is prodigious. When you have those enormous masses of men and not very great train facilities it does not require very much imagination to see what a very difficult operation it must be. With regard to the Indian wounded who are necessarily detained in England previous to their departure for India, we hope in a few days to have 3000 beds at Brighton. In the meantime they are comfortably housed at Brockenhurst. Everything is being done to ensure the comfort of the Indian sick and wounded.

Sir J. D. Rees: Is there in the hospital any trouble concerning the food of any of the Indian troops?

Mr. Tennant: I think it is being perfectly done. There has not been any complaint so far as I am aware.

Sir J. D. Rees: I did not suggest it.

Mr. Tennant: I am glad the honourable Member does not. Of course, they have everything specially constructed and a special personnel. We are arranging for the use of mobile hospitals during the winter which we think may be particularly useful. The barge suggestion I confess is quite a new one to me. I shall be glad to lay the honourable Member's suggestion before my medical military authorities, by whom I am sure it will receive the consideration it deserves. Whether it is possible or not is another matter.

Mr. Douglas Hall: A report on the system has been sent to some of the authorities and they have approved of it.

Mr. Tennant: I hope we shall be able to put it in force. The honourable baronet (Sir F. Banbury) informed us of a very distressing case, which I am afraid is only too true, of a wounded officer who came home without having had his wound dressed except for the initial dressing after it was inflicted. I can only express the hope that with the more perfect organisations which we now have there will be no recurrence of such a case. With regard to nurses, I hope I have said sufficient to satisfy the House. I will certainly convey the honourable baronet's statement to the medical authorities, and if there is not room in the other houses the two hotels which he has mentioned will be utilised.

Sanitation: Success of Measures Taken.

I would say one or two words upon a phase of the medical activities which I think the country will consider as important as those with which I have already dealt. I mean the question of sanitation. Every effort has been made to preserve the health of the troops in the field, and so far I may say they have been entirely satisfactory. The sanitary difficulties increase, of course, as the campaign proceeds. We are now endeavouring to see in advance what our requirements will be and to meet them. In this connexion we are preparing divisional sanitary companies, which will consist of sanitary inspectors and men. Yesterday Sir A. Keogh, the Director General of the Army Medical Service, saw the members of a sanitary committee whom he had sent out to the front to examine into a phase of the situation which I told the noble lord in private conversation was causing me anxiety. The committee has just returned from a tour of inspection, and they assure us that nothing could exceed the sanitary condition of the actual trenches at the front. That, of course, is where the danger occurs. I would like to relieve the mind of the noble lord of any anxiety that I may have caused him in that particular. I can assure the House that I myself was greatly relieved by the information brought back by the committee. Of course, every precaution which science and the experience of these gentlemen can suggest has been taken, and the task—I hope it will be fully realised by the House—has been admirably conceived and well carried out. Proof of that is that we have had very few cases of enteric. I do not wish to go more fully into details as to the steps we have taken to preserve the sanitary condition of our soldiers, because I am informed that the statement might be copied by the enemy, and no doubt it is part of the military situation. If they are inefficient in their sanitary arrangements we will not regret it. Therefore, I do not wish to go further into the matter lest I should be aiding the enemy. But who is not liable to be lying awake at night thinking of the terrible hardships through which our troops have to go, and are daily and nightly undergoing, in the titanic struggle which is now going on? Our troops have all the horrors which they have before their eyes, with frost-bites at nights now added, and if the horrors of disease are to be added to all this, then indeed it would be that we were not serving the State in the manner in which the State has a right to expect. We cannot always be certain of these matters, especially as the campaign goes on, and, as I have said, the dangers which confront the troops in the field become greater and greater almost from day to day, particularly when our troops move to the ground which has recently been occupied by the enemy and where there may be all the horrors of decomposition going on. I feel that the House realises the task which lies before us. Honourable Members will know that these are anxious times. I think that Members will be glad to know that so far as this phase of the situation goes we have been successful. We have been successful through the skill, energy, activity, and scientific knowledge of the Royal Army Medical Corps under Sir Arthur Sloggett. I should like the House not to withhold the meed of praise where it is due to men like Sir Arthur Sloggett and Sir Alfred Keogh.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Bartlett, George Norton, M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Superintendent at the Exeter City Asylum.

Budd, Arthur, M.B., B.S. Durh., has been appointed Medical Officer and Public Vaccinator for the No. 7 District by the Launceston (Cornwall) Board of Guardians.

Christian, L. de B., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory and Workshops Act for the Hounslow District of the county of Middlesex.

Duckett, A. H., M.B., Ch B. Aberd., has been appointed Non-resident Medical Officer to the Bath Poor-law Union.

Farquhar, George G., M.B., Ch B. Aberd., F.R.C.S. Eng., has been appointed Honorary Surgeon to Darlington Hospital.

Gunning, C. J. Hope, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Ophthalmic Surgeon at the St. Marylebone General Dispensary (temporarily).

Langdale-Kelham, R. D., has been appointed House Physician at University College Hospital.

Sansom, E. A. L., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Barnsley, Beckett Hospital and Dispensary.—Second House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and laundry.

Barnsley County Borough.—Resident Tuberculosis Officer. Salary £300 per annum, with board and residence.

Barnstaple, North Devon Infirmary.—House Surgeon. Salary £100 per annum, with board and laundry.

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

Birkenhead and Wirral Children's Hospital, Woodchurch-road.—House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

Birkenhead Borough Hospital.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birmingham General Dispensary.—Resident Medical Officer unmarried. Salary £240 per annum, with apartments, fire, lights, and attendance.

Birmingham Royal Orthopædic Hospital, Newhall-street.—Two Clinical Assistants. Salary £25.

Birmingham Union.—Dudley-road Infirmary: Second Assistant Medical Officer. Salary at rate of £210 per annum. Third Assistant Medical Officer. Salary at rate of £170 per annum. Fourth Assistant Medical Officer. Salary at rate of £160 per annum. Erdington Infirmary and Cottage Homes: Assistant Medical Officer. Salary £200 per annum. Selly Oak Infirmary: Assistant Medical Officer. Salary at rate of £180 per annum. All with apartments, rations, laundry, and attendance.

Bradford Royal Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

Bridgwater Hospital.—House Surgeon, unmarried. Salary at rate of £125 per annum, with board, lodging, and washing.

Brighton Isolation Hospital.—Junior Resident Medical Officer. Salary £100 per annum, with board and lodging.

Bristol General Hospital.—Resident Obstetric Officer for six months. Salary at rate of £120 per annum, with board, residence, &c.

Bury and District Joint Hospital Board.—Assistant to Medical Superintendent. Salary £200 per annum, with board, washing, and lodging.

Camberwell Infirmary.—Assistant Medical Officer. Salary £190 per annum, with apartments, board, and washing.

Canterbury, Kent and Canterbury Hospital.—Senior House Surgeon and Junior House Surgeon unmarried. Salaries £100 and £90 per annum respectively, with board, lodging, and washing.

Cardiff, King Edward VII.'s Hospital.—House Surgeons for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

Cardiff, King Edward VII. Welsh National Memorial Association.—Assistant Resident Medical Officers at Sanatoria. Salary £150 per annum and maintenance.

Coventry and Warwickshire Hospital. Coventry.—Junior House Surgeon. Salary £100 per annum, with rooms, board, washing, and attendance.

Dudley, Guest Hospital.—Senior Resident Medical Officer. Salary £120 per annum, with board, residence, attendance, and washing.

Dumfries, Crichton Royal.—Temporary Assistant Physician, unmarried. Salary at rate of 5 guineas a week, with apartments, board, laundry, and attendance.

Dumfries and Galloway Royal Infirmary.—Assistant House Surgeon. Salary £65 per annum, with board and washing.

Durham, Sherburn Hospital.—Medical Officer. Salary £300 per annum and house.

Epsom, London County Asylum, Horton, Surrey.—Junior Assistant (Sixth) Medical Officer. Salary £200 per annum, with board, apartments, and washing.

Essex Education Committee.—Medical Inspector. Salary £300 per annum.

General Lying-in Hospital, York-road. S.E.—Resident Medical Officer for three months. Salary £50 per annum, with board.

Gloucester, Gloucestershire Royal Infirmary and Eye Institution.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

Great Northern Central Hospital, Holloway-road, N.—Resident Medical Officer. Salary £120 per annum, with board, residence, and laundry.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £200 per annum, with board, lodging, and washing.

Halifax Union Poor-Law Hospital, Salterhebble. — Resident Medical Officer. Salary £140 per annum, with apartments, rations, and washing.

Huddersfield, Storthes Hall Asylum, Kirkburton.—Assistant Medical Officer. Salary £250 per annum, with rooms, board, attendance, and washing.

Leeds General Infirmary.—Resident Casualty Officer. Salary £125 per annum, with board, residence, and laundry.

Leicester Royal Infirmary.—Two Resident Assistant House Surgeons for six months. Salary £100 per annum.

Liverpool Infectious Diseases Hospital.—Locum Tenens Resident Medical Officer. Salary 5 guineas per week, with board, washing, and lodging.

Liverpool, Royal Southern Hospital.—House Surgeon for six months. Salary at rate of £60 per annum, with board and residence.

London Homœopathic Hospital, Great Ormond-street and Queen square, Bloomsbury, W.C.—Assistant Physician.

Macclesfield General Infirmary.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

Maidstone, Kent County Asylum.—Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, quarters, attendance, washing, &c.

Manchester, Ancoats Hospital, Mill-street. — Resident House Physician. Salary £80 per annum, with board and apartments.

Manchester Institution at Crumpsall.—Second Resident Assistant Medical Officer, unmarried. Salary £180 per annum, with rations, apartments, fire, light, washing, and attendance.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester Royal Eye Hospital.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

Manchester, St. Mary's Hospitals for Women and Children.—Resident Surgical Officer. Salary £90 per annum, with board and residence. Also House Surgeon for three or six months. Salary at rate of £70 per annum, with board and residence.

Manchester, Victoria Memorial Jewish Hospital, Cheetham.—Female Resident Medical Officer for six months. Salary at rate of £80 per annum, with rooms, board, and laundry.

Much Wenlock, King Edward VII. Memorial Sanatorium, Shirlett. —Resident Medical Superintendent. Salary £300 per annum and all found.

Newcastle, Co. Wicklow, Royal National Hospital for Consumption for Ireland.—Assistant Resident Medical Officer. Salary at rate of £200 per annum, with board and residence.

Newcastle-upon-Tyne City Hospital for Infectious Diseases.—Resident Medical Assistant. Salary £200 per annum, with board, lodging, &c.

Newcastle-upon-Tyne and Northumberland Sanatorium for Consumptives, Barrasford, North Tyne.—Resident Medical Officer. Salary £350 per annum, with board, residence, and laundry.

Newport (Mon.). Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

Northampton General Hospital.—House Surgeon. Salary £120 per annum, with apartments, board, washing, and attendance.

Norwich Isolation Hospital.—Resident Medical Officer. Salary at rate of £240 per annum, with rooms, board, and washing.

Nottingham General Dispensary.—Resident Surgeon, unmarried. Salary £250 per annum, with apartments, &c.

Nottingham General Hospital.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

Portsmouth Royal Hospital.—House Surgeon for six months. Salary £130 per annum, with board, &c.

Preston Royal Infirmary.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

Rhondda Urban District Council.—Temporary Assistant Medical Officer of Health and School Medical Officer. Salary at rate of £300 per annum.

Royal Waterloo Hospital for Children and Women, S.E.—Senior and Junior Resident Medical Officers. Salaries at rate of £90 and £70 per annum respectively, with board and washing.

Salford Royal Hospital.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

Salford Union Infirmary.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

Sheffield City Education Committee.—Assistant School Medical Officer. Salary £300 per annum.

Sheffield Royal Hospital.—Assistant House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing

Sheffield Royal Infirmary.—House Surgeon. Salary £100 per annum, with board and residence.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

South Shields Union, Harton Poor-law Institution.—Assistant Medical Officer, non-resident. Salary £200 per annum.

Stepney Tuberculosis Dispensary.—Assistant Tuberculosis Officer. Salary £250 per annum.

Stoke-on-Trent, North Staffordshire Infirmary, Hartshill.—House Physician and House Surgeon, unmarried. Salary at rate of £120 per annum each, with board, residence, and washing.

Sunderland Royal Infirmary.—Senior Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

Taunton, Somerset and Bath Asylum, Cotford.—Assistant Medical Officer. Salary £250 per annum, with apartments, board, washing, attendance, &c.

Taunton, Taunton and Somerset Hospital.—Senior House Surgeon. Salary £120 per annum, with board, lodging, and laundry.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

Tunbridge Wells General Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, &c.

University of London.—Examiners.

Wakefield, Clayton Hospital.—Senior House Surgeon. Salary £160 per annum, with board, lodging, and laundry.

Wakefield, West Riding Asylum.—Assistant Medical Officer. Salary £250 per annum, with apartments, board, washing, and attendance. Also Locum Tenens Assistant Medical Officer. Salary as arranged, with apartments, board, and travelling expenses.

Walsall and District Hospital.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

Warrington County Borough.—Temporary Assistant Medical Officer of Health. Salary £250 per annum.

Warrington Infirmary and Dispensary.—Senior House Surgeon. Salary at rate of £200 per annum, with board, apartments, and laundry.

Warwickshire County Council.—Assistant County Medical Officer of Health. Salary £300 per annum.

West Bromwich and District Hospital.—House Surgeon and Assistant House Surgeon. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

West End Hospital for Diseases of the Nervous System, Paralysis, and Epilepsy, 73, Welbeck-street, W.—Resident House Physician for six months. Salary at rate of £100 per annum. Also Honorary Anæsthetist.

Wigan, Royal Albert Edward Infirmary and Dispensary.—Senior House Surgeon. Salary £170 per annum, with board, apartments, and washing.

Wolverhampton and Staffordshire General Hospital.—Resident Medical Officer and House Surgeon for six months. Salary at rate of £125 per annum each, with board, rooms, and laundry.

Worcester General Infirmary.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Penarth, in the county of Glamorgan ; and at Wymondham, in the county of Norfolk.

Births, Marriages, and Deaths.

BIRTHS.

Fairbank.—On Nov. 24th, at Harley-street, the wife of H. A. T. Fairbank, M.S., F.R.C.S., of a daughter.

Garnett.—On Nov. 29th, at South-street, Greenwich, the wife of Graham H. Garnett, M.D., of a son.

Wink.—On Nov. 24th, at Ferndale, Carnarvon-road, Clacton-on-Sea, the wife of Charles Stewart Wink, M.R.C.S., Lieutenant, R.A.M.C.T., of a daughter.

MARRIAGES.

Chopping—Newlands.—On Nov. 26th, at the Episcopal Church, Gatehouse of Fleet, Major Arthur Chopping, R.A.M.C., to Edith Jane, younger daughter of the late Joseph Newlands, Glasgow.

Thomson—Whittaker.—On Nov. 25th, at All Saints' Church, Blackpool, David A. Thomson, M.A., M.B., B.S , to Eleanor, daughter of the late Lawson Whittaker, J.P., and Mrs. Whittaker, Merlwood, Blackpool.

DEATHS.

Donbavand.—On Nov. 22nd, at Plymouth, after a severe operation, Edgar John Donbavand, M.R.C.S., L R.C.P.

Nix.—On Nov. 26th, in H.M.S. *Bulwark*, Percival Kent Nix, B.A., M.B., Fleet Surgeon, Royal Navy, aged 44 years.

O'Brien-Butler.—On Nov. 1st, died of wounds received in action with the Expeditionary Force, Captain Charles Paget O'Brien-Butler, R.A.M.C.

Steel.—On Monday afternoon, Nov. 23rd, from wounds received that morning at La Clytte, Major E. B. Steel, R A.M.C.

Thompson.—On Nov. 26th, suddenly, in Croydon, Henry George Thompson, M.D., V.D., J.P.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PRACTICAL GUIDES TO FOOD ECONOMY.

THE issue of special leaflets by the Board of Agriculture and Fisheries should be very widely known at the present juncture, as they invariably contain practical information of the greatest value on questions of food economy. Last week, for example, a series was issued on the harvesting and storing of garden vegetables (potatoes, artichokes, onions, and so forth), on pig-feeding, and the purchase and preparation of food for poultry in gardens and allotments. These valuable leaflets are bound in volumes from time to time, each containing 100. They may be obtained at the office of the Board of Agriculture and Fisheries, Whitehall-place, London, S.W., price 6*d.* each volume, post free. The scheme of issuing these pamphlets is an admirable one, which may save much unnecessary loss and waste of food caused by the lack of good practical knowledge and management.

THE WATER SYMBOL.

To the Editor of THE LANCET.

SIR,—I have read with interest your annotation entitled "Medical Characters in Chinese Writing" in THE LANCET of Nov. 21st, and especially the lucid explanation of the "key picture" system of Chinese characters which indicates the close relationship existing in sense between certain words expressing similar notions. The fact which you point out, that the symbol for water—the waved line—is still used in practical business, is perhaps not so generally familiar as you assume. Of course it is known to those who have ever read a book on astronomy, being the sign of Aquarius or the Water-bearer, and I have by me a photograph of the premises of the Aquarius Mineral Water Company at Shanghai showing a big signboard on the roof with this sign of the waved line.

There is no doubt about the vitality of this symbol. It is to be seen in the cartouches of the names of the Pharaohs and in the Rosetta stone where it is more like MM, and we still see it in our letter N which is its survival.

I am, Sir, yours faithfully,
London, Nov. 26th, 1914. W. W.

BAVARIAN BIRTH-RATE.

Mr. Lucien Buchmann, British Consul at Munich, writes in his annual report:—There were in Bavaria in 1911 215,203 births, in 1912 214,548, and in 1913 207,458. The decrease affects mostly legitimate births, which amounted in the three years to 188,738, 187,423, and 181,187 respectively, whilst illegitimate births remained almost stationary—viz., 26,465, 27,125, and 26,271. Although, however, the Bavarian birth-rate is decreasing, like that of the whole empire, yet the more rational and more careful rearing of children results in a larger percentage reaching manhood than was the case in former years, and there is still a yearly increase of population, but not sufficient to satisfy the demand for labourers at certain seasons. The Nuremberg birth-rate was, during the first six months of 1914, over 8 per cent. less than during the same period of the preceding year.

A NATIONAL CHRISTMAS CARD.

WE have received from Messrs. Raphael Tuck and Sons, Limited, two specimens of their National Christmas card, the entire profits of the sale of which are to be devoted to the Prince of Wales's National Relief Fund. The card consists of a folded cover 7½ × 5½ inches, enclosing a four-page illustrated leaflet retained by a red, white, and blue braid. On the front cover is a coloured reproduction of Mr. Harry Payne's group of the Home, Colonial, and Indian Forces, with naval vessels and aircraft afloat and aloft in background. The leaflet on its third page shows a beautiful photogravure of Mr. Bernard Gribble's picture of a Dreadnought passing and saluting the *Victory*. Altogether a dignified and artistic card, it will surely sell in hundreds of thousands at the modest price of 6*d*.

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W. H. G.—The following list of handbooks will prove useful. There is no single book on either of the subjects mentioned by our correspondent, but a great amount of valuable information is contained in the manuals mentioned below. They are all obtainable from Messrs. Wyman and Co., Fetter-lane, London, E.C.

(A) Management of a Field Hospital:
  1. Regulations for Army Medical Service. 6*d*.
  2. Manual of Royal Army Medical Corps Training. 9*d*.
  3. Field Service Manual, Army Medical Service. 4*d*. To which might be added—
  4. Field Service Regulations, Part II. 1*s*.

(B) Commissariat:
  1. Regulations for Supply, Transport, and Barrack Services. 9*d*.
  2. Supply Handbook for Army Medical Service Corps. 1*s*. 6*d*.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Papers:—Mr. J. Gray: The Electrical Conductivity of Echinoderm Eggs, and its Bearing on the Problems of Fertilisation and Artificial Parthenogenesis (communicated by Prof. J. S. Gardiner).—Dr. J. C. Willis: The Endemic Flora of Ceylon with Reference to Geographical Distribution and Evolution in General (communicated by Dr. D. H. Scott, foreign secretary to the Royal Society).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—Philip Turner, J. D. Rolleston, Sidney Gilford): at 4.30 P.M.

Specimens and Cases:
Dr. Eric Pritchard: Abscess of the Liver.
Dr. J. D. Rolleston: Cerebral Embolism in Diphtheria.
Dr. E. B. Gunson: Pericarditis in Scarlet Fever.

CLINICAL SECTION (Hon. Secretaries—Thomas H. Kellock, David Forsyth): at 8 P.M.

Clinical Cases:
Dr. Alexander Morison: Case of Precordial Thoracostomy for Heart Disease.

Paper:
Dr. A. F. Hertz and Mr. C. H. Fagge: Case of Spontaneous Gastro-enterostomy with Subsequent Perforation and Recovery after Operation.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Discussion on Tetanus, with Special Reference to (*a*) Prophylaxis, (*b*) the Serum Treatment of Established Tetanus—Dosage and Method of Administration (opened by Major D. Embleton, R.A.M.C.). Followed by Prof. F. W. Andrewes, Dr. J. Eyre, Lieut. R. B. Blair, R.A.M.C., Dr. C. Browning, and others.

HUNTERIAN SOCIETY, Barbers' Hall, Monkwell-street, E.C.

WEDNESDAY.—9 P.M., Clinical and Pathological Evening. Cases and Specimens will be shown by Dr. F. Fox, Dr. T. Thompson, Mr. L. Bromley, and Mr. W. G. Ball. Dr. A. C. Jordan and Mr. R. L. M. Wallis: Demonstration Illustrative of War Injuries.

SOUTH-WEST LONDON MEDICAL SOCIETY, Bolingbroke Hospital, Wandsworth Common, S.W.

WEDNESDAY—9 P.M, Dr. S. Dodd: Eclampsia.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. J. B. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Nose, Throat, and Ear (Mr. H. D. Gillies). X Rays and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham): Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3.30 P.M., Special Demonstration of Cases illustrating the Diagnosis of Disease by Clinico-pathological Methods (Mr. T. H. C. Benians). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Howell: Physiology of the Cerebellum.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Howell: Cerebellar Disease.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY.—3 P.M., Lecture:—Mr. Stuart-Low: The Ear.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. W. K. Sibley: Electrical Treatments, Ionisation, Electrolysis.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Erythema and Ul-erythema.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

MONDAY.—5 P.M., General Meeting of the Members.

ROYAL SANITARY INSTITUTE, 90, Buckingham Palace-road, S.W.

TUESDAY.—7.30 P.M., General Discussion on Preventive Inoculation (opened by Prof. G. Sims Woodhead).

CHADWICK PUBLIC LECTURES, London School of Economics, Clare-market, Kingsway, W.C.

FRIDAY.—8.15 P.M., Sir Ronald Ross, K.C.B.: Government and Military Sanitation in the Tropics (illustrated with lantern slides).

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THE LANCET Office, Dec. 1st, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 26	29·780	S.W.	0·17	60	54	41	50	52	Raining
,, 27	29 946	S.W.	0·03	56	51	44	43	44	Fine
,, 28	29 844	S.W.	0·45	57	53	43	49	51	Cloudy
,, 29	29·910	S.W.	0·08	59	54	45	48	50	Cloudy
,, 30	29·630	S.	0·57	56	50	45	52	53	Raining
Dec. 1	29·716	S.W.	0·02	77	54	50	47	50	Cloudy
,, 2	29 970	S.W.	...	71	53	48	47	50	Cloudy

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THE LANCET, December 12, 1914.

The Croonian Lectures
ON
MODERN ASPECTS OF CERTAIN PROBLEMS IN THE PATHOLOGY OF MENTAL DISORDERS.

Delivered before the Royal College of Physicians of London,

By EDWIN GOODALL, M.D. Lond., B.S., F.R.C.P. Lond.,
MEDICAL SUPERINTENDENT, CITY OF CARDIFF MENTAL HOSPITAL.

LECTURE II.*

Sir Thomas Barlow and Gentlemen,—The beneficial results which follow upon the administration of a reliable preparation of thyroid gland in certain forms of mental disorder, of which in my first lecture I gave illustrations, are not merely gratifying in themselves, but are to be welcomed as affording incidentally a striking demonstration of the dependence of such conditions upon defective metabolism. Furthermore, these results have been the means of directing the attention of those engaged in the endeavour to elucidate the pathology of the psychoses to the functions of the glands with internal secretion in relationship to states of mental alienation.

The Ductless Glands and Mental Disease.

Very seldom is one's attention drawn in actual psychiatric practice to these glands, and practically to the thyroid alone, because the insane patient presents the symptoms of myxœdema or Graves's disease. The dependence of the psychosis in such cases upon the defect or disease of the thyroid gland is proved not only by the effect of medicinal treatment, but in the case of Graves's disease by that of surgical interference. Delmas[1] records a case of insanity in Graves's disease in which the psychosis disappeared three months after the operation of hemi-thyroidectomy, and a similar case is recorded by Horand and others.[2] Such instances as these, with the fact that mental disturbance occurs during thyroid treatment in predisposed persons and ceases with cessation of such, do away with the theory that the psychosis and the Graves's disease are merely concomitant and dependent upon a common cause. Actual insanity is very rare in diseases of the adrenal gland; I have only seen one case of insanity with Addison's disease, though psychical changes are known to occur. In the absence of notes I do not refer to the symptoms, but Porter Phillips[3] describes mental symptoms which pointed to neurasthenia or dementia paralytica in a case under his notice; further developments led to the correct diagnosis of Addison's disease. In a case of carcinoma of the adrenals, described by Rodinow,[4] the mental condition was that of a patient with insanity of persecution.

The work done upon the morbid anatomy of the ductless glands in mental disorders has elicited the following few facts. It is especially in epilepsy with insanity that changes are found, in the thyroid, parathyroid, pituitary, and suprarenal glands, and these are of the following general nature: to the naked eye, shrinkage, asymmetry, diminution of weight; histologically, sclerosis, with hyperæmia, or even hæmorrhagic infiltration, shrinkage of acini, diminution of colloid, proliferation of the lining epithelium of the acini. Briefly, shrinkage of the gland and replacement of essential (parenchymatous) tissue by fibrous tissue, nothing of a characteristic or peculiar kind. This morbid condition of some or all of the ductless glands in epilepsy with insanity, but especially of the thyroid, has been found in all cases as yet examined by the various workers who have reported on the subject.[5] In respect to dementia præcox and manic-depressive insanity there are no uniform results, and there is no sufficient evidence that any of the glands of internal secretion are diseased. In confusional states anatomical evidence of degeneration of function of the thyroid, hypophysis, and adrenals has been recorded (Parhon and others), but requires corroboration. In respect to dementia paralytica, de Albertis and Masini[6] record their results in 20 cases in respect of the thyroid gland checked by numerous controls; in about 75 per cent. there were similar changes to those given above. The function of the gland was, in their view, wholly or in part abolished. But it has to be borne in mind that sclerotic changes may and do occur in other organs, such as the liver and kidney, in chronic cases of insanity. It is clear that the work done upon this subject is much in need of extension, amplification, and control by means of parallel observations upon sane persons of the same age who have died from the same common maladies as the insane persons examined; control further, by examination of other organs in the same person, such as the heart, liver, and kidneys. Gorrieri[5] is one of the few writers with whom I am acquainted who have proceeded on these lines, making numerous controls in sane persons, and he finds that anatomical changes in the ductless glands are more frequent in the insane in respect to epileptic insanity. Further, Amaldi[7] found lesions of the thyroid in 56 per cent. of 107 individuals suffering from various (the most diverse) forms of insanity, as against 32 per cent. of 22 sane controls. Evidence of hypoplasia of the ductless glands in cases of defective brain development, more pronounced than hypoplasia of the organs in general, has not been furnished, not sought for even, that I am aware of.

Toxicity of Fluids in the Insane.

This point has not been systematically inquired into, and there are very few observations of value. One reads, and more especially hears, a good deal about "toxins" in the psychoses, but the familiarity with which the term is used is not based upon pathological and chemical research. Such work as has been done has mainly been with the fluids of epileptics, no doubt on account of the interest attaching to the problem of the epileptic seizure.

Blood Serum and Cerebro-spinal Fluid; Urinary Colloids.

Although I have not worked directly at the problem of the toxicity of the body-fluids in the insanities, I have, in conjunction with my friend and co-worker, Dr. H. A. Schölberg, inoculated intravenously 80–90 rabbits with the blood serum and cerebro-spinal fluid of pronounced cases of dementia paralytica and the blood serum of recent and chronic cases of dementia præcox. This work I shall refer to in connexion with the subject of the production of precipitin and antibody, as it was carried out with a view to studying

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* Lecture I. was published in The Lancet of Dec. 5th, 1914, p. 1287.

No. 4763.

such production, and not with a view to studying toxicity. It will suffice here to say that the serum was employed in doses of from 2 to 3·5 c.c., and in total amount as much as 42 c.c. were injected, spread over a period of weeks up to 19 weeks, in bi-weekly doses. The cerebro-spinal fluid was used in doses of from 2 to 8 c.c.; in total amount as much as 19·5 c.c. was injected during a period of one month. Of 84 animals, 28 died in the course of these injections, or 33 per cent.; excluding a few which died in anaphylaxis and from accidental causes, I should put the number dying from an unknown (? toxic) cause at 25 per cent. The majority of these showed great, sometimes enormous, wasting, whether injected with blood from cases of dementia paralytica or dementia præcox. Convulsions were not observed. The animals injected with serum from dementia præcox cases died to about an equal extent with those injected with serum of general paralytics. The numbers injected with cerebro-spinal fluid were much fewer, but no deaths occurred in them. Pilcz [8] found that white rats, after injections of 2–3 c.c. of serum from general paralytics, were not apparently affected, and he cites Pappenheim as observing the like in a rabbit which received 9 c.c. of cerebro-spinal fluid from a general paralytic.

As regards toxicity of the blood of epileptics, Meyer's [9] experiments go to show that there is room for further research in order to elucidate the facts. He failed to produce any symptoms in 10 out of 11 guinea-pigs injected intraperitoneally with 10–15 c.c. of defibrinated blood taken from normal persons, the eleventh dying after convulsions. Of 10 guinea-pigs injected with blood removed during an epileptic seizure, nine had typical tonic-clonic convulsions in from one to five hours after injection. Blood taken in the interval affected the animals according to the time which had elapsed since the last seizure and to the severity of the disease; sometimes there were seizures and death, sometimes there was death, at other times no result. But a second injection with the seizure-blood two to four days after the first did not produce the same results as on the first occasion. There are some grounds for the view that the toxic substances in such conditions are colloidal in nature, and more precise results might be obtained by injecting adialysable substance alone. The experiments of Loewe [10] upon urinary colloids in epileptics and in the insane support this view. He reduced the adialysable substance of urine *in vacuo*, treated it with alcohol, and dried the insoluble portion in an exsiccator; the latter keeps for many months in sealed tubes. Loewe claims that the adialysable substance is increased in epileptic urine, and that it is rich in phosphorus-holding compounds, but these important points need further investigation, especially as the increase is not limited to epilepsy, but occurs also in the katatonic phase of dementia præcox, in dementia paralytica—although after seizures—and in delirium tremens. The essence of Loewe's research, however, is his statement that, whilst the adialysate in the psychoses mentioned is highly toxic, it does not produce seizures, whereas in epilepsy it is not only toxic (chiefly in connexion with the epileptic convulsion), but produces seizures very like epileptic ones when injected intravenously. Similarly produced exsiccate from the urine of normal persons is not toxic.

Chronic Renal Disease.

Whereas mental disorders associated with morbid conditions of the ductless glands, and proved to be caused by such, might be classified as disorders of metabolism or of auto-intoxication, there are other cases in which the theory of an auto-intoxication appears more reasonable; as, for example, the case of insanity occurring in chronic renal disease, or with morbid conditions of the gastro-intestinal tract. With chronic renal disease there occasionally occurs such definite mental alienation, amounting sometimes to systematised insanity, that institution care becomes necessary. As with the disorders of mind due to the specific fevers, so with those due to kidney disease: there is no characteristic syndrome. States of confusion and stupor, hallucinations, delusions of persecution, delirium, temporary conditions of agitation or of exaltation—such are the common symptoms. The clinical picture is liable to be complicated by somatic disorders due to focal lesions in the brain. Thus the suggestion of dementia paralytica may be raised. But *vice versâ*, as was well shown by the younger Bristowe some years ago, cirrhosis of the kidneys is very frequent in dementia paralytica; yet in the absence of detailed and systematic study of other vital organs, including the ductless glands, too much weight must not be laid upon this fact. It is noteworthy that in chronic renal disease, as in the infection-psychoses, katatonic symptoms may occur; such cases are described by Bischoff and Ascoli.[11] Improvement in the renal condition brings about the like in the mental disorder in these cases of renal origin. The mental disorder which is sometimes seen in patients in whom there are foci of disease is ascribable to auto-intoxication, since it passes away on removal of such foci. Picqué [12] records two instances—the first, that of a young woman who, after months of confusional insanity, was cured by appendicectomy; the second, a patient with melancholia and hypochondriasis who had chronic prostatitis and was cured of the mental disorder by prostatectomy.

Constipation.

A great deal has been said and written upon the subject of auto-intoxication psychoses due to infection from the gastro-intestinal tract, and there is no doubt a widespread tendency to look upon the affective disorders, more especially, as in some instances either themselves or in respect of certain of their phases or exacerbations originating in disturbances of the gastro-intestinal functions associated with constipation. Apart from the common experiences of everyday life, there is more particularly the experience of the effect of purgatives in recent cases of insanity and in the exacerbations of chronic insanity. Recent cases received into institutions for the insane are very frequently constipated to an extraordinary degree, and when the constipation is at length overcome, and long before the effects (if any) of rest and special diet have had opportunity to become manifest, it is very frequently observed that the acuter mental symptoms, those which caused anxiety before admission or trouble after admission, have passed away. In passing I would state my opinion that acute and recent cases of insanity do not require special diet; they require their ordinary diet and extras in plenty. Practical experience justifies this view; exceptional instances, of course, occur; apart from these there is, in my belief, no reason for the milk diet which these patients are by some subjected to. That such symptoms as mental depression, irritability, impulsiveness with violence, inability to fix attention and to work at the customary task, a stuporose state, occur amongst chronic cases of insanity, and are removed by an efficient purgative, is known to every experienced mental nurse. More interesting is the pyrexia which sometimes accompanies these manifestations. One meets with cases of secondary dementia, or of recent insanity passing into dementia, patients not able to express their feelings, noticed by the nurse to be mentally changed, or to look ill, or to refuse food, or abstain from work; upon taking the temperature the thermometer records 103° or 104° F. Drastic purging reveals extreme constipation, and is followed by rapid subsidence of the symptoms, including pyrexia. This picture is highly suggestive of a toxic substance acting upon an unstable brain; it appears to furnish a pure instance of a somatic disturbance inducing a psychical one. Many like myself there must be who have never seen a case in which mental disturbance antedated the somatic disorder which exists in cases of insanity; we do not see the patient at the commencement of the mental illness. I would expressly state that I am not denying that the sequence of events may be as stated; but I should require thoroughly reliable information, based upon a medical examination of the alleged instance of psychical causation at the date of the earliest mental symptoms, before crediting this explanation, and even then one would need to know something of the medical history of the patient for, say, three months before the appearance of symptoms, including information as to weight changes.

Disorder of the Gastro-intestinal Functions.

To return to my theme: Plönies[13] has described several cases in which psychoses, mostly characterised by hallucinations, imperative ideas, and depression, were due in his view to disorders of gastric digestion, objectively associated with tenderness to percussion over the gastric region and dilatation of the stomach. At any rate, mental disorder disappeared upon suitable treatment of the gastric condition. Hudovernig[14] gives the case of a man, aged 30 years, sent to the surgeon for appendicitis, and transferred to the psychiatric clinique. He showed acute confusion, with hallucinations, ascribed to some intestinal disturbance. Castor-oil was followed by foul-smelling stools; thereafter the mental disturbance passed away. His history, subsequently ascertained, showed that four days before admission to the surgical clinique he had partaken of sausage and sauerkraut, upon which the illness had supervened. Such cases as those of Plönies, especially, indicate the need for more scientific and systematic physical examination of the insane; I do not believe that under the existing system in mental hospitals anything approaching to adequate examination, including the application of the methods of the clinical laboratory, is made. I believe that this is one of the matters which will not be righted until psychiatric cliniques, as seen abroad, are established in this country. The examination of the stools in cases in which early symptoms of mental disorder are observed and in cases of periodic attacks or exacerbations should be part of the ordinary routine; the amount of the stools in 24 hours, their consistence (hard, dry, semi-liquid, membranous), their form (normal, or in scybala, or pellets), their colour, odour, and constitution (whether containing undigested food or not)—these are points for observation. Pardo[15] shows that the rate of transit of the intestinal contents is very greatly delayed in recent and acute cases; carmine mixed with the food is not all evacuated in 24–48 hours, as in healthy people, and in the patients themselves when well. Further, the dye appears, not continuously, as in health, but irregularly at intervals. Benigni[16] studied the intestinal functions in 50 cases of insanity of various kinds, the patients being upon a fixed diet, according to the method of Schmidt and Strasburger. He found disorder of one or more of the digestive functions in rather more than one half of the cases; protein digestion especially was incomplete, but the conversion of starch and fat was so also. The residual content of the fæces gave evidence of incomplete digestion.

Indicanuria.

The presence of indigo-producing substances in the urine of the insane has for long been a subject of interest, upon the supposition that their presence in excess pointed to toxæmia of intestinal origin. The teaching in respect to the mode of origin of these substances has in effect been that, by the splitting of proteins in the digestive tract, indole is ultimately formed and through the agency of bacteria; that this is absorbed through the intestinal mucosa into the system; that it then undergoes oxidation into indoxyl, which by synthesis ultimately becomes indoxyl-potassium-sulphate or indican, which is excreted by the kidney. This substance on oxidation yields indigo. When indigo is demonstrable by qualitative tests in considerable amount (at the time of the test) the patient is said to have "indicanuria." Such patients frequently, perhaps usually, exhibit constipation, and it is argued that this leads to excessive putrefaction and formation of indole. Indicanuria is, briefly, commonly believed to be due to derangement of the intestinal functions, and to connote toxæmia of intestinal origin. With regard to urinary indigo in mental diseases, statements have been made from time to time by psychiatrists which indicate a belief that the indigo-producing substances are in excess in recent and acute mental disease, or in exacerbations of chronic insanity, and more especially in manic-depressive insanity and confusional states; according to some, especially in akinetic forms of insanity in general; and this apart from constipation. It has been stated that the urine of sane controls in average and in poor health does not give anything like the indigo-reaction yielded by urine in the above-mentioned kinds and forms of insanity. Certain writers have gone beyond the point of recording an excess of urinary indigo in mental disorders, and claim to have correlated variations in the mental state with variations in the indigo; thus, Taubert,[17] in a case observed by him for six months, believes that he noted a close parallelism between psychic excitement and increased indigo, and states further that the latter was often found 10–12 hours before the maniacal phase. In four cases of manic-depressive insanity he found a considerable and lasting increase of indigo during the maniacal phase, but a fifth case showed none. Pardo[18] also makes a very complete statement as to the direct association of "indoxyluria" with mental states, and speaks of having reduced the elimination of "indoxyl" from a point 10 to 20 times above normal to practically zero by means of what he calls intestinal antiseptic treatment and a milk diet, cure of the mental disorder proceeding *pari passu*. I have never seen beneficial results in insanity from the use of so-called intestinal antiseptics, and it has been shown by Seige[19] that the marked indigo-reaction found in some cases of mania and melancholia is not influenced by measures taken against intestinal putrefaction. Pardo's statements further imply the use of a quantitative method, apparently Maillard's; but the evidence I am about to mention shows that all such methods are unreliable.

Research on Urinary Indigo in Cases of Insanity.

The frequency of a marked positive reaction to the test for indigo in newly received cases of insanity, and in exacerbations in chronic cases, has interested me, in common with others, and some three and a half years since I suggested to my colleague, Dr. Stanford, research chemist at Cardiff Mental Hospital, that he should investigate the subject. The results of Stanford's prolonged and painstaking research have recently appeared in the *Zeitschrift für Physiologische Chemie* (Bände 87 (H. 3) and 88 (H. 1)), a preliminary communication dealing more particularly with the urinary indigo in certain cases of insanity having appeared in the *Journal of Mental Scienec*, April, 1911. Stanford points out that it has been generally assumed that because indigo is produced by the action of hydrochloric acid and an oxidising agent upon potassium-indoxyl sulphate, the indigo-producing substance of human urine is identical with the latter. And since it has been demonstrated in the urine of animals fed with indole, the assumption is further that the indigo-producing substances in human urine are derived from the indole of the intestinal canal. These assumptions are not based upon exact evidence. The indigo-producing substances of human urine have not yet been isolated.

Stanford's examination of more than 2000 specimens of human urine for indigo shows that the indigo-producing substances are extraordinarily unstable, so that the amount present in a specimen is greatly diminished in from 1–3 hours, and in from 3–6 hours from the passage of the urine these substances have mostly completely disappeared. The reason for this is unknown. There can therefore be no question of the exact quantitative estimation of indigo at present, and even qualitative estimations to be of value must be made immediately after the urine is voided. This phenomenon of the disappearance of the indigo-producing substances is not mentioned, I understand, in the voluminous literature upon the subject of urinary indigo. The instability of the substances is scarcely compatible with the assumption that they consist of potassium-indoxyl sulphate, since the chemists who have carefully studied this substance have pointed out its stability under various conditions. It is more probable that they are not always the same, but consist of a mixture of closely-related substances of the indigo group.

An approach to accuracy in the quantitative estimation of urinary indigo is probably afforded by a method briefly described by Stanford, which consists in the colorimetric estimation of a chloroform solution of the indigo contained in each quantity of urine as soon as passed, the coloured solution for comparison being standard Fehling's solution. The formula given by Stanford affords a number which is proportional to the amount of indigo present. By adding together the numbers so calculated for all the samples through the 24 hours a number is obtained which is proportional to the total indigo excreted during that period. In his latest paper Stanford[20] shows that if the extraction of the indigo by chloroform is carried out in an atmosphere of carbon-dioxide a pure blue solution is constantly obtained—a very important advance, as it permits of exact colorimetric comparison. The daily excretion of indigo-producing substances in the urine of a case of mental disease in which the mental state showed no alteration during the 10 days over which the examination was conducted was found by Stanford to vary very considerably, the variation exceeding the limits of experimental error and being unconnected with meals. Whilst recognising, as one must do, from this and other similar observations of Stanford, that there are daily and even hourly fluctuations, it may be still the case that the total indigo found over a given period, by the means now indicated, is greater in certain forms of mental disorder than in sane controls. The researches I have alluded to, which are not concluded, encourage one to believe that comparative quantitative estimations of the substances in question will ere long be available.

Pardo, in the work I have mentioned, argues that the antecedent substance of urinary indigo-red is probably produced by micro-organisms which have migrated from the intestine to the urinary passages, on the basis of experiments in which he inoculated urine, especially alkaline urine, and negative to the indigo-red test, with fæcal micro-organisms. This urine then gave a positive result with the test. But Stanford's researches show that the indigo test is positive in sterile urine. An inquiry conducted by my colleagues—E. Barton White and Stanford—shows that when bacillus coli and bacillus pyocyaneus are grown upon a variety of media of known composition and degree of alkalinity, to which small quantities of indole have been added, no indigo-producing substance was found. Lastly, in respect to the question of urinary indigo, it is to be observed that indigo can sometimes be demonstrated in cases, including cases of insanity, in which there is no evidence of disturbance of intestinal function, so that the indigo-producing substances may not be wholly due to cleavage of proteins in the gastro-intestinal tract, but are conceivably merely the expression of a disorder of metabolism which is associated with mental disorder as cause or effect.

Recently Wladytschko[21] has sought to obtain direct evidence of the noxious influence of intestinal toxins upon the central nervous system by feeding rabbits and guinea-pigs over long periods with parakresol and indole. In these instances he found regressive and destructive changes in the vessels of the brain in the cells (presumably nerve cells), and glial proliferation. The original work I have not had an opportunity to consult. Such direct experiments appear desirable on a larger scale with information as to the degree in which histological changes occur locally and generally.

Bacteriological Examination of Fæces.

One would have thought that the evidence we possess in support of the view that mental disturbance and actual insanity are in some cases due to disorders of the gastro-intestinal tract would have led long since to a critical bacteriological examination of the fæces in these cases. In point of fact, extremely little work has been done upon the subject. In 1911, at the meeting of the British Medical Association at Birmingham, I communicated preliminary results obtained by Dr. E. Barton White and myself as the outcome of the examination of a considerable number of stools from freshly-admitted cases of acute melancholia and acute mania, the first (in a few cases the second) stool passed being taken. This work we carried on, as opportunity occurred, till the close of 1913, the major part of it during the past two years having been done by Dr. White, to whom I would here express my obligations for his coöperation and for valuable assistance in drawing up our results. I would point out that investigations of this kind are extremely laborious, and two workers merely cannot be expected to make more than a very modest contribution to our knowledge. Still, it is absolutely necessary to have even the elementary information we are able to furnish. Apart from our results I know of no work, as far as the insane are concerned, other than that of the Italian workers Pardo and Benigni, which, however, from the bacteriological standpoint is but scanty.

Our procedure in this investigation was as follows: A gramme of fæces was well shaken up in water with sterile shot in a sterile vessel, a suspension of 1 per cent. being thus obtained, from which decimal dilutions were made by transporting 10 c.c. from one vessel to the next, each vessel containing 90 c.c. of water before the addition. Tubes of broth, McConkey's medium, and litmus milk were inoculated from these vessels. The milk tubes were heated a sufficient time at 80° C. to destroy adult organisms, and placed in an anaerobic apparatus in the incubator. Gelatin and agar plates were poured from the higher dilutions, and heated gelatin plates—for the observation of spores—from the lower ones. Agar-fuchsin plates—for the study of colonies—were prepared from the lower dilutions. Examination of the tubes and plates afforded approximate information as to the total number of organisms present; according to the dilution in which they occurred in the former case, and by actual counting in the latter. Anaërobes of the bacillus enteritidis group were studied from the milk tubes. The highest dilution in which typical bacillus coli occurred was ascertained by separating colonies upon a gelatin slope from the higher dilutions of broth cultures, and inoculating upon suitable media, and observing the latter for typical bacillus coli reactions. Subsequently, and only in some cases, agglutination, opsonic, and complement-deviation tests were performed with typical bacilli coli colonies.

Our results are set out in the following tables (Tables V.–IX.), in comparison with the average results obtained by Houston[22] in normal human fæces. From Table V. it appears that 5 out of 10 cases of acute mania showed a larger amount of total organisms (and bacillus coli) than the normal average; of the acute melancholia cases only 4 out of 18 showed the same. But if, as there is ground for believing, the normal upper limit is not more than 100 millions, 9 out of 10 of the acute mania cases, and 10 out of 18 of the acute melancholia cases, are above the average normal figures. As regards streptococci, if 1,000,000 per gramme be regarded as the average, only 3 out of 10 acute mania and 5 out of 18 acute melancholia show higher numbers than the normal. Nearly all the streptococci in the cases examined were of the short-chained variety, in this respect agreeing with the normal. These streptococci, for some unknown reason, only appeared upon agar-fuchsin plate in 4 per cent. of the cases; in the remainder they were obtained direct from the broth-tubes originally inoculated.

The relative number of bacillus coli per gramme in the specimens examined is set out in Table VI. Whereas in the normal cases no less than 82 per cent. of the specimens showed no more than 10 million, no less than 90 per cent. of the acute mania and 55 per cent. of the acute melancholia cases showed more than 10 million. Table VII. shows the frequency of anaërobic organisms giving the

TABLE V.—*Number of B. Coli per gramme of Fæces (or total organisms: the figures being the same owing to the preponderance of B. coli).*

Normal (Houston).	Mania (10 cases).	Melancholia (18 cases).
100m. not 1000m. (probably 100m. more correct).	1. 10m. not 100m.	1. 100,000 not 1m.
	4. 100m. ,, 1000m.	1. 1m. ,, 10m.
	2. 1000m. ,, 10,000m.	6. 10m. ,, 100m.
	2. 10,000m. ,, 100,000m.	6. 100m. ,, 1000m.
	1. 100,000m. ,, 1,000,000m.	1. 1000m. ,, 10,000m.
		3. 10,000m. ,, 100,000m.

Number of Streptococci per gramme of Fæces.

Normal (Houston).	Mania (10 cases).	Melancholia (18 cases).
At least 100,000 (probably an underestimate).	1. None found.	3. None found.
	1. Only few observed.	1. Few only.
	4. At least 1000.	2. At least 1000.
	1. 100,000 not 1m.	1. 10,000 not 100,000.
	1. 1m. ,, 10m.	6. 100,000 ,, 1m.
	1. 10m. ,, 100m.	2. 1m. ,, 10m.
	1. 100m. ,, 1000m.	1. 10m. ,, 100m.
		2. 100m. ,, 1000m.

TABLE VI.—*Relative Number of B. Coli per gramme of Fæces in Samples Tested.*

—	Normal (Houston)	Mania.	Melancholia.
100,000m.		10%	
10,000m.	4%	20%	16·66%
1,000m.	6%	20%	5·55%
100m.	9%	40%	33·33%
10m.	16%	10%	33·33%
1m.	20%		5·55%
100,000	24%		5·55%
10,000	14%		
1,000	8%		

TABLE VII.—*Number of Organisms in B. Enteritidis Group per gramme of Fæces Present as Spores.*

Normal (Houston).	Mania (10 cases).	Melancholia (18 cases).
100,000 not 1m.	1. 100 not 1000.	1. None found.
	5. 1000 ,, 10,000.	3. 100 not 1000.
	2. 10,000 ,, 100,000.	9. 1000 ,, 10,000.
	2. 100,000 ,, 1m.	1. 10,000 ,, 100,000.
		2. 100,000 ,, 1m.
		1. 1m. ,, 10m.
		1. 100m. ,, 1000m.

TABLE VIII.—*Number of Aerobic Spores per gramme of Fæces.*

Normal (Houston).	Mania (10 cases).	Melancholia (18 cases).
1000 not 10,000	4. Absent.	12. Absent.
	5. 100 not 1000.	4. 100 not 1000.
	1. 1000 ,, 10,000.	2. 1000 ,, 10,000

cultural, morphological, and staining reactions of bacillus enteritidis. In 8 out of 10 cases of mania and 13 out of 18 of melancholia the numbers estimated as present were below the average normal numbers. Table VIII. shows that aërobic spores were absent or in greatly reduced numbers, in both these forms of insanity. Table IX. shows that the bacillus coli present in both forms were typical in as high a percentage of cases as obtains for normal stools. The apparent exception furnished by the reaction of fluorescence in the cases of depression may with some likelihood be attributable to certain instances of faultily prepared media. The agar-fuchsin plates did not show other than the usual colonies present in normal stools. The bacillus coli found were usually acid-forming, only about 6 per cent. giving no red colouration. Typical bacillus coli (the cases were of mania or melancholia) were submitted to agglutination and opsonic index tests. The results in respect to agglutination were unlike those obtained in normal persons by Houston (a certain proportion giving a positive result) in that agglutination failed to occur, and with a low degree of dilution of the serum, in any case; but at any rate they resemble his in the point that the results in the controls were the same (in each case the organism used was the patient's). As regards the opsonic index ("homologous"), this was higher than the control-observation in seven instances, lower in four. Lastly, it is interesting to note that complement-deviation did not occur in these cases, either when the patient's serum or that of a control was used.

TABLE IX.—*Percentage of Cases in which B. Coli were Positive in the following Typical Reactions.*

—	Normal (Houston)	Excitement.	Depression.
Motility	89	100	100
Uniform turbidity, scum deposit on glucose broth	100	100	100
Acid and gas lit. glucose	100	100	100
Acid and gas lit. lactose	92	94	96
Fluorescence on N.R. agar...	93	95	82
Indol production	98	92	96
Acid and clot lit. milk...	92	95	97
Lit. nutrose	90	90	92
Solid (no liquefaction) gelatin ...	100	100	100

One may summarise such information as this small contribution to the subject of the bacteriology of the fæces in acute mania and melancholia affords thus: an increase was found in the total number of organisms and of bacillus coli in the great majority of the cases of mania, and in rather more than half the cases of melancholia; a diminution in the anaërobic organisms investigated in the great majority of the mania and the majority of the melancholia cases; a considerable diminution (or absence) of aërobic spores in both kinds; an absence of atypical bacillus coli and of unusual organisms in both kinds. Lastly, these cases afford no evidence that bacilli coli, even though present in abnormal quantity, exercise any influence in the conditions dealt with.

Johnson and I[23] examined the agglutinating power (upon bacillus coli) of the serum in dilutions of 1:100 (90 cases), 1:50 (3 cases), and 1:30 (7 cases) in 100 cases of insanity, of which 29 were cases of acute melancholia, 53 of acute mania, 9 of delusional insanity, 6 of general paralysis, 2 of alcoholic insanity, and 1 was a case of acute dementia. Of the 100, 50 showed agglutination described as "good" or "partial," though as many as 39 of them gave only "partial," and 50 showed no agglutination. Controls showed no agglutination in 84·6 per cent., the rest of the cases showing, with one exception, only partial agglutination. To present this observation concisely, 89 per cent. of the insane cases (the bulk of them composed of cases of melancholia and mania) gave either only partial agglutination or none at all. The organisms were foreign ones, and not the patient's own; single strains in 75 per cent., mixed strains in 25 per cent. These observations agree with those of White and myself in showing that in acute and recent insanity there are, in the rule, no agglutinins formed against bacillus coli.

In the following cases I examined the stools with a view to ascertaining whether there was a preponderance of Gram-positive organisms, the cases being all acute and recent, newly admitted. An emulsion was made in sterile distilled water of a portion the size of half a marble from the centre of the stool, 8–10 c.c. of this was centrifugalised for 10 minutes; one part of the supernatant turbid fluid was mixed with two parts of a 96 per cent. solution of alcohol, and the mixture centrifugalised for half an hour. The deposit, which consisted practically entirely of bacteria, was stained on cover-slips by Gram and counter-stained with carbol-fuchsin. Table X. gives the results:—

TABLE X.—*Showing the Number of Gram-positive Organisms in Fæces.*

Initials.	Mental disorder.	Stool examined.	Preponderating organisms according to stain.
B. P.	Mania.	First passed after admission.	Fuchsin-stained, greatly.
F. W. D.	Confusion (puerperal).	,,	,, ,,
L. L.	Melancholia.	,,	Fuchsin-stained, but Gram + very numerous.
E. D.	,,	Second stool.	,, ,,
L. M. B.	,,	First passed.	Fuchsin-stained, but Gram + few, and in groups.
M. C. H.	Mania (puerperal).	,,	,, ,,
C.	Mania.	,,	,, ,,
L. M.	,,	,,	Fuchsin-stained, greatly. Gram + numerous in groups.
C. W.	Melancholia.	First (after enema).	Fuchsin-stained, but Gram + considerable number.
C. B.	,,	First passed after admission.	,, ,,
H. W.	Mania.	,,	Fuchsin-stained, but Gram + fair number.
G. O.	Melancholia.	,,	Fuchsin-stained, but Gram + few.
S. T.	Acute confusion.	,,	Fuchsin-stained, but Gram + considerable number.
D. H.	Melancholia.	,,	Fuchsin-stained, but Gram + few.
D. L.	Adult, healthy working imbecile (as control).	—	Fuchsin-stained, but Gram + fair sprinkling.

Having regard to these results I was surprised to find that Pardo records the preponderance of Gram-fast organisms in cases of mania and melancholia in stools. He gives two plates, one showing the bacteria of the stool at the beginning, the other at the close of a maniacal attack; in the former violet-stained organisms preponderate, in the latter red-stained. His suggestion is that the flora in these cases is that of protein-putrefaction, and that the proteolytic anaerobes—which are Gram-fast—are present in excess at the outset of the attack. The observations recorded above lend no support to Pardo's views, and the results recorded by Barton White and myself fail to afford evidence in favour of Pardo's statement that the putrefactive anaerobes are increased at the expense of bacillus coli and B. aërogenes, the normally-preponderating organisms; nor do they support his statement that streptococci are increased. In future work on the intestinal flora in acute and recent cases of insanity it seems to me particularly desirable that the anaërobes should be studied, as these are the organisms about which we know least in these conditions, for the sufficient reason that they are the most difficult to work with.

Anaërobic Organisms: Agglutination Test and Opsonic Index.

The chief obligatory anaërobes of the human intestine are commonly stated to be bacillus putrificus, bacillus aërogenes capsulatus (bacillus Welchii), and bacillus enteritidis sporogenes (Klein). In conjunction with Dr. Schölberg I carried out an investigation with a view to ascertaining the results of the agglutination test and to estimating the opsonic index, in respect to two of these anaërobes, bacillus putrificus and bacillus enteritidis sporogenes, in recent and newly-admitted cases of acute mania and acute melancholia. We worked with stock cultures of these organisms. Repeated efforts to obtain a pure culture from various sources of bacillus aërogenes capsulatus failed. Even in respect to the other two anaërobes the difficulties surrounding this work were considerable, for it was necessary to maintain them for a very long time in pure culture pending the admission of suitable cases of the forms of insanity (mania and melancholia) we investigated. Our results are here summarised. The agglutination test was done in the low dilution of 1 in 20. The opsonic index was estimated for each of the two organisms thus:—

I.	II.	III.
Control's serum	Patient's serum	Patient's serum.
,, leucocytes ...	,, leucocytes...	Control's leucocytes
Organism	Organism	Organism.

In none of the 22 and 25 cases respectively in which the agglutination test was carried out was there a positive result, and when a partial reaction was recorded it was shown by the control as well as by the patient and in equal amount. The opsonic index was estimated upon admission of the patient 18 times in the case of bacillus enteritidis; in 12 it was less, in 6 more than in the control. It was estimated on 22 occasions in the case of bacillus putrificus; in 15 it was less, in 5 more than in the control, in 2 the same. These results point in the same direction as those referred to below (respecting the opsonic index in the case of various common organisms), and merely indicate a lowered resistance in the majority of the patients. In addition to the usual control an observation was made in the above cases with a mixture designated above as No. III., in which the patient's leucocyte was replaced by the control's leucocyte, so that the mixture was heterologous. It is interesting to note that 15 times out of 19 in the case of bacillus enteritidis, and 16 times out of 22 in that of bacillus putrificus, the opsonic index was higher with the heterologous than the homologous mixture. Without indulging in speculation as to the relative rôle of the serum and the leucocytes in the process of ingestion of organisms by the latter, this observation would appear to indicate that the part played by the white cells is of greater importance than they are usually credited with. The observation has interested me considerably, as affording a possible basis for the treatment of toxic conditions by the injection of foreign leucocytes, a matter to which I refer in my next lecture.

Observations upon the opsonic index in respect of various common organisms in cases of insanity have been recorded by Shaw[24] and by Babington,[25] the former examining 15, the latter 52, cases of various kinds. The organisms tested were bacillus coli, staph. aureus, streptococcus fæcalis, bacillus paratyphi, microc. rheumaticus, and bacillus tuberculosis. Both these observers found that the index was on the average lower in the acute insane than in normal, healthy controls, and the former observed that the index varied more in the insane. The index was found by Babington to be lower especially with bacillus coli; and to rise to normal, or higher, in respect to the organisms as a whole, after recovery. These observations go to show that the insane, especially those suffering from acute forms of insanity, are more liable to infection than healthy normal persons. No doubt this was *a priori* probable, but evidence is, of course, necessary in such matters.

LEUCOCYTOSIS IN MENTAL DISORDERS.

The demonstration of leucocytosis in toxic conditions led in due course to the study of the white blood corpuscles in the psychoses, especially in those which *a priori* might be associated with such conditions. As regards the erythrocytes, all workers are agreed that, in respect to them, and to the amount of hæmoglobin present, there is nothing of special significance to record in the insanities; the numbers of the former and the percentage of the latter are merely reduced in proportion to the reduction in general health. In regard to the leucocytes in mental disorders, a considerable amount has been written and important deductions have been made. I first allude to those records which in my judgment are noteworthy, and subsequently to certain personal observations, and finally summarise.

Dementia Præcox.

The largest number of observations seems to have been made in respect of the mental states grouped under the heading of dementia præcox. Sandri,[26] an Italian observer, studied 32 typical cases, acute and recent, and 8 chronic cases, of many years' standing. The former he was fortunate enough to be able to examine in from ten days to three months from the commencement of the disease. In acute instances of the hebephrenic and paranoidal forms he found a moderate leucocytosis—up to about 10,800—and a slight increase in the neutrophiles at the expense of the lymphocytes. In acute cases of the katatonic form—to my mind the most striking of the varieties—Sandri found no leucocytosis, but a relative increase of the lymphocytes, especially the small kind, at the expense of the neutrophiles. These conditions, it will be remarked, are the exact reverse of those obtaining in the other two varieties of dementia præcox. Further, in the katatonic type the cell protoplasm and the nucleus showed various signs of degeneration, and myelocytes were numerous; in the other two forms the cells and their nuclei were commonly well preserved. Amongst the eight chronic cases only those of the katatonic type showed changes of the same kind as in the acute cases. These observations, therefore, purport to draw a marked distinction between the katatonic and the other types. Graziani[27] does not find any distinction in the leucocytal counts in the three types of dementia præcox. Confirming the observations of Bruce and Peebles, which were in respect of the katatonic type, he describes a moderate leucocytosis with increase of the neutrophile percentage at the beginning of the malady. In such incomplete recovery as one finds in these cases, he agrees with the authors mentioned, that the neutrophile cells are maintained at a fair percentage (60 per cent.). With the supervention of dementia the total count and the proportion of neutrophiles both diminish, with proportional increase of the lymphocytes; with this statement other writers, such as Dide and Berkley, agree. Camus and Lhermitte[28] find a very moderate leucocytosis—up to 10,000 only—in dementia præcox, persistent throughout the malady, with a proportionate increase of lymphocytes. Heilemann,[29] coming to recent writers, is clear that there is a change in the cell-count in dementia præcox, although the observations of the various writers are, as he truly remarks, difficult to coordinate and interpret. They seem, on the whole, to agree that there is a lymphocytosis—not limited to katatonia, as Sandri states. In a table of 24 cases Heilemann shows that neutrophiles are low and lymphocytes and eosinophiles increased. He is unable to say whether there are differences in different forms of dementia præcox. Pförtner[30] (1912) finds a moderate leucocytosis with relative lymphocytosis, so that lymphocytes amount to 58–59 per cent., whilst neutrophiles are notably diminished. He finds no differences in the counts in different forms of the malady. He describes hypo-eosinophilia in 43 per cent. Acute exacerbation was accompanied by hyper-leucocytosis, with relative neutrophile increase, in two cases, which conditions subsided with the exacerbation—a picture very suggestive of the influence of a toxin. But very often important changes occurred in the relative proportion of the varieties of white cells without change in the clinical picture and *vice versâ*. Barnes[31] reports two similar cases to the above. A very important communication upon the blood-changes in dementia præcox appeared in 1912 by Lundvall,[32] based upon the systematic study of 15 cases covering the different phases of the disease in the same patient, observations being made daily, or every second day, for a long period. He finds that there are typical blood-changes, which he terms "blood crises," at periods marked by psychical and motor unrest. These consist in oligocythæmia and hyperleucocytosis, characterised by increase in the neutrophiles. These crises appear earlier than the psychical changes. In the intervals there is a diminished total count with relative mononuclear increase. Lundvall's observations, taken with those of the last two writers, seem to me of particular importance as indicating a destruction of red blood corpuscles and a positive chemiotaxis—conditions which point to a bacterial invasion rather than to an endogenous toxæmia. Unfortunately, one rarely sees a case of dementia præcox in a mental hospital in the initial phase. In consulting practice, I am informed, such cases can be watched developing for very many months, but I can well understand that it is well-nigh impossible in such practice to make blood-examinations systematically and in connexion with exacerbations.

Summarising our present knowledge, it may be stated that in the earlier phases of dementia præcox there is a moderate increase in the total white cell count, with relative increase of the neutrophiles. Thereafter in marked exacerbations of the morbid processes these increases are more pronounced. The ordinary picture is that of a relative lymphocytosis. The progress towards dementia is characterised by a persistence of this, with a low total count; this appears to be the view held, but I would refer to a chart which follows as to this point. There is no sufficient evidence of differences—quantitative or qualitative—in the cell-counts in the different forms of dementia præcox, though in quite a recent communication Kulm and Purdum[33] confirm Sandri's statement as to the high proportion of lymphocytes in the katatonic variety. The need of more extensive observations, for comparative observations in respect of the different forms, for observations in the very early stages of the morbid process, is, I believe, greater in the disorders grouped under this heading than in other kinds of insanity. The physical condition of many cases of stupor and katatonia bears a resemblance to that found in myxœdema, in which disease there is also a relative lymphocytosis.

Insanity with Epilepsy.

Graziani finds what he describes as the characteristic formula of the toxic-infective state—viz., leucocytosis and polynucleosis, with hypo-eosinophilia at the time of seizures; the statement is not complete. Morselli and Pastore,[34] and also Campioni,[35] who paid attention solely to the eosinophiles, agree that there is a hypo-eosinophilia for a few days prior to the attack, which persists during it, the eosinophile ratio rising after it—conditions pointing to negative and positive chemictaxis, according as toxin is present in quantity or is diminishing. These statements of the Italian observers, in respect to leucocytosis, polynucleosis, and eosinophilia, in relationship to the phases of the epileptic condition, are entirely borne out by the French observers Klippel and Feil[36] (leucocytosis, 20,000–22,000). The subsidence of leucocytosis and the rise in eosinophiles are comparable to what is seen in convalescence from acute infections. Nieuwenhuize[37] and Jödicke[38] find that there is usually no leucocytosis before a seizure, but the latter describes two cases in which there was a marked rise in the number of white cells a few days before such. Riebes[39] found in seven cases examined immediately before the seizure a polynuclear increase of 15 per cent. to 20 per cent., with corresponding diminution of lymphocytes. Between seizures he obtained discordant results. As to eosinophiles, he agrees with the authors cited. Bruce[40] found hyperleucocytosis during all stages, but most marked during and after seizures. Gorrieri[41] describes a more or less pronounced leucocytosis during and after seizures, in some instances evident a few minutes before the seizure; in the intervals the count is in general higher than normal, but considerable individual differences obtain. The summary seems justified, in respect to epilepsy with insanity, that there is a considerable degree of accord between observers, the results showing leucocytosis with hypo-eosinophilia in connexion with seizures, uncharacteristic conditions obtaining in the intervals; in other words, evidence of toxæmia, not acute, at the time of the seizures.

More observations are needed, especially during the premonitory period.

Mania—Melancholia.

Graziani finds a leucocytosis of moderate degree (12,000–16,000), with polynucleosis, at the commencement of the attack, and the like on relapse. The neutrophile count remains high in cases which last for months without improvement. At the close of the attack of ordinary duration the neutrophile count is low. A rise in the eosinophile count is of good omen; experience supports this, which is *a priori* probable. Bruce describes a high total count, with relative neutrophile increase, at the onset; these subside as the disease progresses, and perhaps a second minor increase accompanies symptoms of recovery. The persistence of this, with a normal percentage of neutrophiles, after recovery is a favourable sign. A fall in the neutrophile percentage without mental improvement is, as McDowall[42] has pointed out, an unfavourable sign. In unfavourable cases the leucocytal counts are variable, and lymphocytosis becomes apparent with the lapse of time. In subacute and chronic conditions lymphocytes predominate (Klippel and Léfas[43]).

To summarise, there is general agreement as to a leucocytosis at the beginning of an attack of acute mania or acute melancholia, and with increase of the neutrophiles; and the few who have studied the leucocytal count throughout the normal course of a favourable case would not dispute the accuracy of Bruce's statement concerning it. More evidence is required as to subacute and long-lasting cases, and as to the count at the stage when it is apparent that recovery is to take place. Whilst statements as to isolated occasional white cell counts in acute mania and melancholia are pretty frequent, it is remarkable how few have conducted inquiry in these conditions over long periods. This criticism applies to the cell-counts in the psychoses generally, but one would have thought an exception would have been made in cases of the particular kind just discussed, conveying strongly, as they do, the impression of toxic pathogenesis.

In puerperal insanity the leucocytal counts resemble those of acute mania. A record by Gorrieri[44] of the white cell count in cases of acute alcoholic insanity, recovering within three months, is interesting, because it is rare, and because it bears out the association of a polynuclear increase, accompanied by relative diminution of lpmphocytes, with a toxic process. The qualitative count became normal upon recovery, with rise in the proportion of eosinophiles.

States of Acute Confusion ("Amentia" of the Italians).

Graziani and Sandri agree in the main. There are the usual conditions which go with what appears clinically to be a toxic state—viz., leucocytosis (slight), polynuclear increase (not marked), hypo-eosinophilia. These pass away with decline of the illness and recovery. The case of mental disorder due to pellagra is of great interest from the comparative standpoint, when regard is had to the outcome of modern investigations as to its pathogenesis. Bardin,[45] in 14 uncomplicated cases, found lymphocytosis (affecting the small lymphocytes especially), with diminution of the polymorphs, this condition being especially marked in the chronic cases.

Dementia Paralytica.

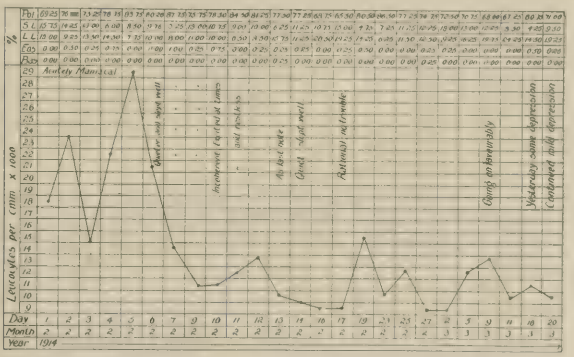
My experience is in accord with that of Klippel and Léfas, and Bruce and Peebles; in the first stage there is a moderate leucocytosis with relative neutrophile increase (75 per cent. to 80 per cent.); in the early second stage these conditions continue, but in the later second and in the third stages, whilst the moderate leucocytosis (up to about 11,000 cells per c.mm.) is maintained, the lymphocytes, small and large, are relatively increased at the expense of the neutrophiles, which fall to from 54 per cent. to 64 per cent. A relative polynucleosis, with frequently only slight increase in the total count, accompanies the febrile attacks of the later stages, and also the paralytic seizures. The illustration of this point and that of the leucocytal count in states of remission (which I have studied over long periods), and a final summary of the subject under notice, I must defer to my third lecture.

Charts Illustrative of Leucocyte Count.

I conclude this lecture by submitting the following few charts illustrative of the leucocytal count in certain recognised kinds of insanity. The number representing the total leucocytes is in each case the average of three total counts of 400 squares each. The percentages of the different kinds of leucocytes are based in each case on 400 consecutive leucocytes.

CASE 1A (Fig. 1).—Patient aged 27 years. Puerperal mania. Duration of disease on admission, one week. Observations (25) over a period of 1¾ months. Hyperleucocytosis during period of acute mania, with sudden fall on its cessation. Moderate increase in total count thereafter. Hypo-eosinophilia throughout. (Patient not completely recovered on cessation of observations, but quite free from mania.) The high neutrophile percentage practically throughout is obvious, and indicative of a toxic process.

FIG. 1.



Puerperal mania. Case 1A. admitted Jan. 31st, 1914.
The reduction necessitated by the size of some of the original drawings has made the lettering in some places difficult to follow, a remark which holds good for other of these charts. Under a low magnifying glass the figures are plain.

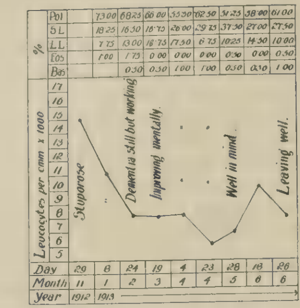
CASE 3 (Fig. 3).—Patient aged 21 years. Confusional insanity. Duration on admission, two weeks. Leucocytosis at outset, disappearing with cessation of the disorder. Polynuclear percentage well maintained at outset, but relative lymphocytosis towards and at close. Eosinophiles very low throughout.

CASE 4.—Patient aged 49 years. Subacute melancholia; agitation and confusion. Duration on admission, some months. Prone to relapse; previous attacks. Observations (27) over one year and two months. This is the case of a woman in mental hospitals three times and for a total period of nearly six years during the past seven years, so that she has remained comparatively well for a very brief period only during seven years. There is a variable total leucocytal count without correlation with clinical manifestations. No marked leucocytosis except when the condition at its worst—

on reception. A relative lymphocytosis is the feature of the qualitative count. A low eosinophile count. The chart of incomplete recovery. (Fig. 4.)

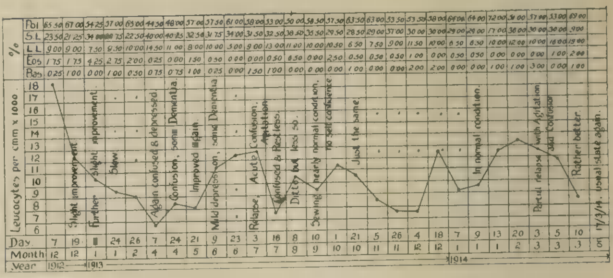
CASE 5.—Patient aged 50 years. Acute melancholia on admission, thereafter chiefly subacute. Duration on admission some months. Observations (23) over nearly one year. Total count shows instability, with leucocytosis in latter half of observation-period, in conformity with the unsettled and relapsing clinical condition. Mostly a relative lymphocytosis; rarely a normal proportion of polynuclears, not maintained. Hypo-eosinophilia. Unfavourable prognosis for complete recovery. (Fig. 5.)

FIG. 3.



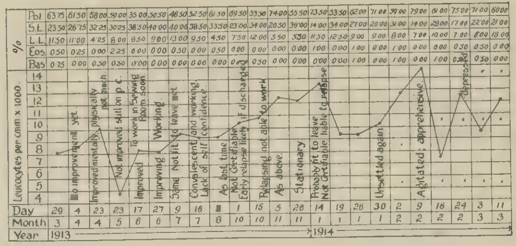
Confusional condition. Case 3, admitted Nov. 27th, 1912. (A certain number of the charts not appearing in this issue of the lectures, the numbering is not consecutive.)

FIG. 4.



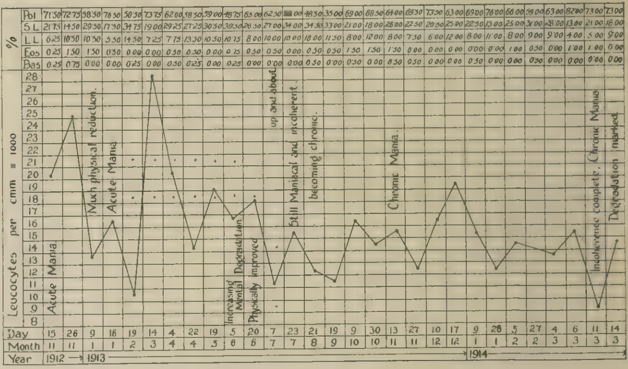
Subacute melancholia. Case 4, admitted Dec. 5th, 1912.

FIG. 5.



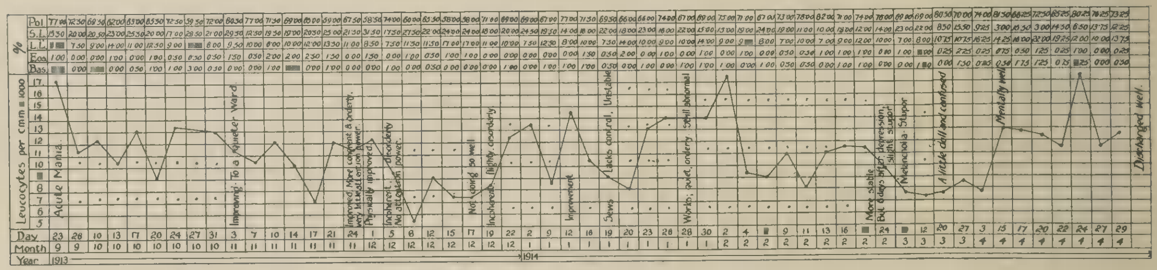
Acute melancholia. Case 5, admitted March 3rd, 1913.

FIG. 7.



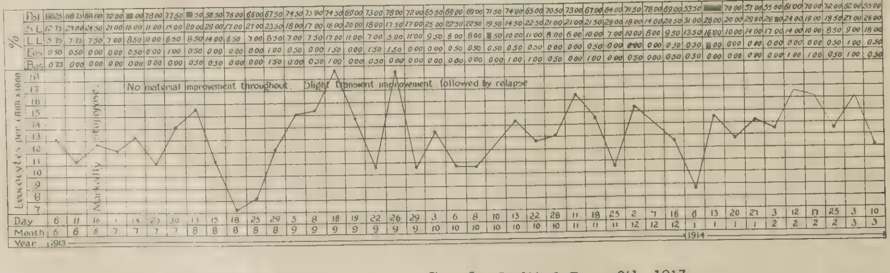
Acute mania. Case 7, admitted Nov. 11th, 1912.

FIG. 8.



Typical acute mania. Case 8, admitted Sept. 9th, 1913.

FIG. 9.



Dementia præcox; stupor. Case 9, admitted June 6th, 1913.

CASE 7.—Patient aged 45 years. Mania, first acute, later chronic. Duration on admission two to three weeks. Observations (28) over a period of 1 year 4 months. Marked leucocytosis on two occasions, early, otherwise moderate, with much variation of total count. Towards close, diminishing total count, but no fall in polynuclear percentage. Deficient polynuclear reaction frequent in course of the case (unfavourable sign). Eosinophile count very low or absent. (Fig. 7.)

CASE 8.—Patient aged 19 years. Acute mania. Duration on admission, one month. Observations (55) over a period of seven months. Marked irregularity of total count, with mainly a moderate leucocytosis. Polynuclear percentage mostly well maintained, and consistently so when nearing recovery. Low eosinophile count. (Fig. 8.)

CASE 9.—Patient aged 23 years. Dementia præcox (stupor). Duration before admission, two months. Observations (40) over period of nine months, moderate leucocytosis throughout; irregular count. Polynuclear percentage well maintained or increased during first half of the period, but in second half a drop in the polynuclear percentage is frequent, especially as case progresses. Very low eosinophile counts throughout. (Fig. 9.)

Observations in 6 cases of epileptic insanity—30 pre- and 39 inter-paroxysmal.—Doubtless it is desirable to make numerous and regular observations in the same patient, but the frequency with which fits occur in cases available for observation is often not sufficient to allow of the collection of results within the time at disposal. Taking the series of observations made in these six patients I find that of the 13 highest counts 11 are preparoxysmal; and of the 15 lowest, 12 are interparoxysmal. A moderate leucocytosis is, on the whole, the prevailing condition throughout. No correlation is to be made out between varieties of cell and phases of the disease. Eosinophiles are low.

The hypo-eosinophilia noticeable in all these charts, illustrating different kinds of insanity, is noteworthy.

Observations on three typical cases of the chronic phase of dementia præcox in adolescents free from other disease.—All were of a few years' standing. Twenty-seven observations in all. The total count can only be called normal on five or six occasions; otherwise a leucocytosis (or a lymphocytosis) with considerable variations, no clinical change accompanying them. The neutrophile percentage is below the normal figure on 14 out of 27 occasions, there being an increase in the percentage of lymphocytes (the large mononuclears chiefly). In five instances the eosinophile percentage is increased, and in six the basophile percentage is at the upper normal limit. These observations are perhaps of interest because records in the chronic cases of dementia præcox are rare.

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NOTE ON THE WOUNDS OF THE SOFT PARTS PRODUCED BY THE MODERN BULLET.

BY G. H. MAKINS, C.B., F.R.C.S. ENG.,
COLONEL, ARMY MEDICAL SERVICE; CONSULTING SURGEON TO THE EXPEDITIONARY FORCE.

THE time seems to have arrived when an opinion may reasonably be expressed as to the so-called "humane" character of the pointed bullets employed in the present war. Before proceeding to this consideration the protest may be reiterated against the "pure sentiment" which has given rise to the employment of the word "humane" and led to international recrimination between parties who, while advocating the employment of a "humane bullet," do not hesitate to place their main hopes on the use of projectiles portions of which may cut off a head, an arm, or a leg, or lay open the major part of one or more of the great body cavities.

Characters of the Wounds.

The main characteristics of the wound produced by the modern pointed bullet depend on two factors—initial velocity of flight and instability of flight in the long axis of the projectile. Of these two factors the former is of comparatively small importance except in the increased capacity of the bullet to produce extensive comminution of the bones when they are struck at a right angle. In the instability of flight and the tendency of the bullet to revolve around a transverse axis, however, the travelling bullet is endowed with a capacity of wounding the soft parts to a degree which no form of expanding or soft-nosed bullet has exhibited before. A dum-dum or a soft-nosed bullet traversing the soft parts alone seldom acquires any deformation or increased wounding power, and, as far as my own experience of the dangers of the soft-nosed Mauser or Mannlicher bullet occasionally used by the Boers in the South African campaign went, I came to the conclusion that they were practically negligible.

On reviewing a long series of the bullet wounds observed during the last two months of the present campaign I have become more and more impressed with the gravity of a considerable proportion of the rifle and machine-gun wounds, which seems to me to correspond much more nearly with the experimental results obtained by von Fessler and others than with the reports furnished by many of the surgeons working during the Balkan campaign, the majority of whom regarded the wounding power of the pointed bullet to be very similar to that of the older dome or ogival tipped bullets of small calibre. That the pointed bullet causes small, clean apertures of entry and exit when it strikes fairly at right angles, even when travelling at high degrees of velocity, there is no doubt. Such wounds are numerous, although in my experience the cases in which occurs perforation or division of small narrow structures such as the peripheral nerves and arteries are not so common as was the case in wounds produced by the Mauser or Lee-Metford bullet.[1] Neither arterial hæmatomata nor aneurysmal varices have been frequently seen in the more serious cases reserved for treatment in France, although I am not in a position to know what may have been observed amongst the large number of less severe wounds transferred at once to England. The same remark applies to isolated injuries of individual peripheral nerves, while the larger area afforded by the brachial plexus has resulted in many paralysed arms complicating the very common wound from the base of the neck to the shoulder region, the result of the attitude so often assumed in the fighting during this campaign.

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[1] THE LANCET, Dec. 20th, 1913, p. 1743.

Allowing the capacity of the pointed bullet to produce the small apertures of entry and exit and the narrow intervening canal made by the older bullet, yet it is clear that as a cleanly perforating instrument it needs to strike with extreme accuracy and precision, and if this be not the case wounds of a vastly different character result. A slight inaccuracy of impact causing only an unimportant increase (or none at all) of the aperture of entry, may result in the production of an "explosive" exit aperture of the extreme type when no bone has been touched and the resistance of the soft parts of the body is alone met with.

Instability of Flight of the Pointed Bullet.

That these wounds are not caused by bullets deformed by ricochet is obvious from the characters of the aperture of entry. On this point it may be added that seriously deformed bullets are seldom extracted, which may depend on the fact that in the recent fighting a large number of the deflected bullets have struck either trees or the soft earth at the margin of the trenches. The more serious ricochets, those from the walls of houses, have been far less abundant. Again, in any case the general outline of the bullet renders it more liable to deflection than to serious deformation unless it meets the opposing object at a very narrow angle.

The ease with which the pointed bullet may be deflected cannot be more aptly illustrated than by examining a number of cases of injury to the head and observing the very great preponderance of gutter wounds over that of tracks traversing the skull, which preponderance (if it existed) was certainly far smaller with the older forms of bullet of small calibre.

The serious nature of the wounds limited to the soft parts can only be attributed to the fact that the instability of flight of the bullet in its long axis is so great that, unless impact with the body takes place by almost the exact tip, a rapid revolution of the bullet on its transverse axis occurs, so that the only slightly diminished force is exerted by the whole lateral area of the bullet on the tissues in the distal portion of the canal and the aperture of exit. If the "remaining velocity" is great this half turn only is probably made; if less the revolution may be complete or even repeated; if the bullet is nearly "spent" it is often retained in a reversed position. The latter is often the case with retained bullets, or their position may be vertical to the course of the wound. The soldiers assert that the enemy sometimes draw out the bullet and reverse its position before firing the cartridge, but even if this be the case it is difficult to believe either that the bullet would travel properly, or that it could account for the many cases of reversed retained bullets met with.

Illustrative Examples.

Evidence of this instability of flight is offered by the appearance of some of the entry wounds; thus rarely wounds are seen of the same outline as the lateral surface of the bullet. On the other hand, the oval wound or the partial gutter leading to a penetrating wound often observed in the case of oblique impact in the case of the older bullets is rare and never well marked. The aperture of entry is rather only slightly enlarged, with merely slight bevelling in one half of its circumference and undercutting at the other. The aperture of exit, on the other hand, is very large, in the case of wounds of the soft parts often oval, and less commonly stellate than when the bones have been implicated. In place of a small tag of subcutaneous tissue in the opening a mass of the brush-like ends of torn muscle and other soft tissues protrudes. Such wounds are seen in the extremities without any evidence of implication of the bones. Very striking instances are seen in the abdomen, thus, (1) a normal small entry wound in the right loin, with a vertically oval wound of the anterior abdominal wall four inches in length, the floor of which was formed by the ascending colon, from which fæces were escaping; (2) a normal entry wound over the ascending colon with an oval exit in the right loin, 3 inches by 2, from which urine escaped and extravasated under the skin of the back; (3) a similar wound entering over the descending colon, with exit in the left loin (in this instance the main urinary extravasation followed the line of the ureter into the pelvis); and (4) entry in the anterior abdominal wall, exit in the left loin, with protrusion of a piece of omentum 6 inches long.

Wounds implicating the thorax scarcely come into the same category, since the presence of a rib at the distal end of the track offers a bony resistance, yet the large valvular openings allowing the free exit of blood and ingress of air which are so often seen were certainly rare in the case of the older bullets.

The chief novelty of the last weeks has been the arrival of men wounded by the modern "hand grenade," which, however, appears to cause more damage to the trench than its occupants.

NOTE ON A FATAL AND EXCEPTIONALLY INTENSE INFECTION WITH MALARIA (P. FALCIPARUM).

BY J. W. SCOTT MACFIE, M.A. CANTAB., M.B. EDIN.,
WEST AFRICAN MEDICAL STAFF.

THE case of malarial fever, a few notes on which are given below, occurred at Sekondi, an important seaport of the Gold Coast Colony, West Africa, and the terminus of the railway which runs northwards into Ashanti as far as Coomassie. Mosquitoes are said to be very troublesome at Sekondi. Simpson (1914)[1] records that on his visit he caught Culex invidiosus, C. rima, Ochlerotatus domesticus, and O. irritans; and states that Stegomyia fasciata was by no means uncommon. His list is not, of course, exclusive, and no doubt other species also occur. The history of the case was similar to that which so often precedes an attack of blackwater fever, and included the following factors: an exacting life, bad quarters, exposure to mosquito bites, repeated attacks of malarial fever, and negligence in the taking of quinine as a prophylactic. I am indebted to Dr. E. W. Graham, senior medical officer, West African Medical Staff, in whose practice the case occurred, for the following notes.

The patient, who was 38 years of age, was employed as a driver on the railway between Sekondi and Dunkwa, and was accustomed to sleep alternate nights at these two places. At the time of his last illness he was in the fourth month of his first tour in West Africa, but he had previously been for five years in India. His quarters in Sekondi were insanitary and infested by mosquitoes, and he stated that he had neglected to take quinine as a prophylactic for some time previous to his admission. On July 15th, 1914, he was admitted to the Sekondi hospital suffering from subtertian malaria. The infection was a slight one, and he was discharged five days later. On August 3rd he was readmitted. On this occasion he was slightly delirious, and his blood showed a heavy infection with quartan and subtertian malaria parasites. As the result of intramuscular injections of quinine he made a good recovery, and was discharged on August 10th with instructions to continue taking quinine, a precaution which, unfortunately, he failed to carry out.

His last illness commenced on August 30th. At mid-day, when he was first seen, he was slightly jaundiced, and looked very ill. His temperature was 103° F., and his pulse 120. He had profuse vomiting. On admission to hospital, at about 2 o'clock, his temperature was 101°. The blood films referred to below were taken at this time. The next morning, at 6 o'clock his temperature was 97·6°, pulse 84, and he looked much better. His urine was normal, his heart sounds a little hesitating, his liver normal, and his spleen only very slightly enlarged. His temperature began to rise again at 2 P.M., and reached its highest point, 104°, at 5 P.M. The patient, however, became comatose, and in spite of every effort died at 6.50 A.M. on Sept. 1st.

Two blood films, the one a thick dehæmoglobinised film and the other a thin film, were kindly sent to the laboratory at Accra by Dr. Graham. The films had been made from the patient's blood on August 30th at 2 P.M., at a time when his temperature was 101°. On examination the thick film was found to consist of a compact mass of malaria parasites. In the thin film, at first glance, as Dr. Graham himself wrote, "two out of every three red blood corpuscles appeared to be infected, in many cases with two or three parasites." One or two segmenting forms of Plasmodium malariæ were found in the film, but with these exceptions practically all the parasites were young ring forms of Plasmodium falciparum. They varied in size from minute bodies with almost solid protoplasm to well-developed rings with a large central vacuole, and not infrequently two widely separated chromatin dots. Very many of the parasites were situated at the extreme periphery of the corpuscles, their chromatin masses projecting out beyond the margin of the cells, and their cytoplasm forming small arcs of the circumferences. It was impossible to determine whether these parasities were really intracellular or not. The appearance of the film certainly suggested that there might be as many parasites present as erythrocytes; but naturally enough, on more careful examination, this was found to be an over-estimate. 2000 red corpuscles, taken as they came, were counted, and the presence or absence of parasites in each noted. The result is given in Table I. Parasites were present in 47·65 per cent. of the red corpuscles; a single parasite in 29·7 per cent., 2 parasites in 13·55 per cent., 3 in 3·5 per cent., and 4 in 0·7 per cent. Three of the 2000 red corpuscles contained 5 parasites apiece, and 1 contained 6. There were therefore 1423 parasites in the 2000 red corpuscles counted.

TABLE I.—*The Distribution of 2000 Red Corpuscles according to the Number of Parasites Invading them.*

—	Number of red corpuscles counted.	Percentage.	Total number of parasites in the red cells of each class.
Uninfected	1047	52·35	0
With 1 parasite ...	594	29·70	594
,, 2 parasites ...	271	13·55	542
,, 3 ,, ...	70	3·50	210
,, 4 ,, ...	14	0·70	56
,, 5 ,, ...	3	0·15	15
,, 6 ,, ...	1	0·05	6
Totals	2000	100·00	1423

In his "Prevention of Malaria," under the heading "The Maximum Number of Parasites," Ross (1910)[2] states: "In Mauritius we found in a fatal case 12/100 of the hæmatids infected." Several authors record 30/100, and Rogers (1908, p. 222)[3] mentions a fatal case "with more parasites than corpuscles"; and Deeks and James (1911)[4] recorded a case, No. 204 of their series, in which "almost every corpuscle appeared to be infected" with tertian parasites. The present case is therefore one of exceptional severity, and if for no other reason would perhaps be of interest on this account. There were, however, other points in connexion with it of equal or greater importance.

It is, I believe, very rarely that unquestionably free parasites have been described in the peripheral blood in malaria. Forms "applied" to the corpuscles are not uncommon, but parasites actually separated from the cells are rare. In this case, however, in addition to the 700 odd intracellular parasites per 1000 red corpuscles, a considerable number of extracellular ones were found also. As they were not evenly distributed over the film, and as a good many parasites were found lying on the extreme margins of the corpuscles about which it was impossible to decide whether they were really intracellular or merely attached to the surface of the corpuscles, it was impossible to determine their percentage accurately. Many of them appeared in the stained film as merozoite-like bodies, and possibly they were merozoites which, in consequence of the intensity of the infection, had not succeeded in penetrating corpuscles. Others were definitely ring-shaped, and like the intracellular parasites not infrequently possessed two chromatin masses. As parasites were also found which appeared to be half inside and half outside corpuscles, it is possible that these free forms had either escaped from, or been squeezed out of, the corpuscles. A natural corollary to the occurrence of these free forms in the plasma was perhaps the fact that polymorphonuclear leucocytes were relatively numerous, and were found to have ingested large numbers of parasites.

A differential count, based on the enumeration of 1000 leucocytes, showed that 58 per cent. were polymorphonuclear cells, 31·5 per cent. large mononuclear or transitional cells, and only 10·1 per cent. lymphocytes. (See Table II.) The low percentage of lymphocytes is probably to be accounted for by the unusual degree of polymorphonuclear leucocytosis, and this, as I have suggested above, may have been evoked in an attempt to eliminate the free parasites by phagocytosis. For, according to other observers, in cases of malaria in which the large mononuclear and transitional forms constituted about the same percentage of the leucocytes as they did in this case, the polymorphonuclear cells were considerably less numerous.

TABLE II.—*Differential Leucocyte Count.*

Type of leucocyte.	
Polymorphonuclear	58·0 per cent.
Large mononuclear and transitional ...	31·5 ,,
Lymphocyte	10·1 ,,
Eosinophile	0·4 ,,
Total	100·0 ,,

Stephens and Christophers (1908),[5] for example, give the following differential count: small mononuclear, 18·1 per cent.; large mononuclear and transitional, 31·4 per cent.; polynuclear, 50·2 per cent.; and eosinophile, 0·4 per cent. An increase in the polymorphonuclear cells in this instance would, if the percentage of large mononuclear leucocytes were assumed to remain constant, bring the differential count into almost exact correspondence with that found in the case here recorded.

Phagocytosis of the malaria parasites had indeed taken place to a remarkable degree. 200 polymorphonuclear leucocytes and 200 large mononuclear or transitional leucocytes, taken as they came, were counted and examined for pigment and ingested parasites. (See Table III.) Ingested parasites were found to be present in 63·5 per cent. of the polymorphonuclear, and in 33 per cent. of the large mononuclear or transitional cells. In the large mononuclear and transitional leucocytes they were always few in number, generally only one or two; but many of the polymorphonuclear leucocytes were crowded with them. It is noteworthy that in this case pigmented polymorphonuclear leucocytes (26 per cent.) were almost as common as pigmented mononuclear leucocytes (28·5 per cent.), which are generally considered to be pathognomonic of malarial infection; although to say that they are absolutely so is not strictly correct, since pigment may occur in the large mononuclear cells in other conditions, as, for example, in trypanosome infections as the result of auto-erythrophagocytosis.[6]

TABLE III.—*Showing the Percentage of Leucocytes of the Polymorphonuclear and Large Mononuclear Types containing Ingested Parasites and Pigment.*

	Polymorphonuclear leucocytes.		Large mononuclear and transitional leucocytes.	
	Number of leucocytes counted.	Percentage.	Number of leucocytes counted.	Percentage.
Neither ingested parasites nor pigment present	66	33·0	103	51·5
Ingested parasites only	82	41·0	40	20·0
Pigment only...	7	3·5	31	15·5
Both ingested parasites and pigment present	45	22·5	26	13·0
Totals	200	100·0	200	100·0

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Accra, Gold Coast Colony.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—At an extraordinary meeting of the Royal College of Physicians on Dec. 3rd Licences to practise were conferred upon the following three ladies who have previously passed the examinations and have now complied with the by-laws:—Mabel Kate Bishopp, Hilda Grace Johnson, and Mary Woods, Royal Free Hospital.

INSOMNIA AND SUICIDE.

BY C. ERNEST PRONGER, F.R.C.S.ENG.,
CONSULTING OPHTHALMIC SURGEON TO THE HARROGATE INFIRMARY.

FOR a long time past newspaper reports of suicide, associated with insomnia, have attracted my attention. Probably if all the cases in all the papers were collected we should find that annually a very great wastage of human life from this cause alone goes on which might to a great extent be prevented. But we must also bear in mind the thousands of sufferers from insomnia who struggle on, and who do not yield to the temptation to end a miserable existence.

Turning to the report of the meeting of the British Medical Association at Brighton in 1913, I find insomnia the subject of discussion in the Section of Neurology. The opening address, by Sir George Savage, seems to suggest his dissatisfaction with the present knowledge and treatment of insomnia, for he closes his remarks with the words: "Recognising the emptiness of my paper, I leave it for you to fill up." He was followed by Dr. Butter Stoddart, and the discussion was carried on by Dr. Constance Long (London), Dr. Robert Armstrong-Jones (Claybury), Dr. Jamieson (Melbourne), and others. The various kinds of treatment discussed were: sedatives and hypnotic drugs, travel and change scene and surroundings, alcohol in some instances, hydrotherapy, hypnotism and suggestion; and words of warning were also used as to the dangers incident to some of these methods of treatment—for instance, the acquirement of the drug habit and alcoholism. I could find no mention even of error of refraction, and yet, as a result of a long experience, I firmly believe this to be the most constant and most powerful predisposing cause of insomnia, and the careful and skilful correction of it the most reliable weapon we possess in overcoming this malady. No danger attends it, and it does not interfere with any other treatment should such be required.

I fully appreciate the action of exciting causes, such as influenza, shock, worry, prolonged nursing, financial stress, &c., but I feel that these by themselves would not be so harmful were it not that the nervous system had been previously severely taxed by the constant strain induced by slight refractive error. My object is to bring home to those medical men to whom the sufferers from insomnia apply for relief, and especially to those who have not hitherto relied much upon the ophthalmic surgeon for help in these cases, the importance of the correction of refractive errors. To do this I think it will be of more practical utility to relate some of my experiences, egotistical though this may seem, and to illustrate some of the points by cases which have occurred in my own practice, rather than to rake up isolated published cases or to refer to the many papers which have from time to time appeared, and have probably already been read and digested.

For more than 20 years my attention has been especially devoted to the consideration of the influence that slight refractive errors have in causing many of the functional nerve troubles so prevalent in these days. Amongst these insomnia has naturally had a prominent place. In my student days we were taught that slight errors of refraction, anything below one dioptre were of no consequence, and might be ignored. From a purely visual point of view this was true, but as time went on it was observed that these slight errors, although not causing any visual defect, are of great importance in that they give rise to sundry neuroses. For a long time, and even now, the view that the correction of slight refractive errors might be a cure for many functional nerve troubles has been scoffed at and ridiculed, but undoubtedly a change is gradually taking place in this respect. Especially should these slight degrees never be ignored in any case of insomnia, and I think it will be found that some error is nearly always present in those cases not associated with organic disease, such as tumour, kidney troubles, and the like, or with persistent pain from any cause. Insomnia is not usually the only symptom, but is generally associated with attacks of great depression, and often with giddiness or headaches.

It seems unnecessary to quote a number of cases of suicide which I have seen reported in connexion with this subject, for there must be few medical men who have not been more or less brought into contact with such cases, and none who have not frequently read of them. I should like, however, to mention just two cases associated with refractive error which made a great impression on me at the time. The first was that of a gentleman who for some years had suffered from attacks of severe headache and depression, whom I saw on two occasions at an interval of five years. Each time I urged him to wear glasses constantly, but in spite of my appeals to his reason and common-sense he persistently refused to wear them except for reading. Some years later his self-inflicted death was reported, and he had left a letter in which was the passage: "I have fought my nerves for years, but can do so no longer."

Some years ago a pretty little girl, aged 13 years, came to me with her mother, for whom I had prescribed glasses. Very slight drooping of one eyelid, together with a highly strung nervous and shy manner, suggested to me that she had inherited her mother's defect—astigmatism—and on examination I found that this was so, and advised glasses. In this case, too, the mother refused to have "such a child" put into spectacles. I pointed out the possible ill-effects that might arise, but, unfortunately, she decided against my suggestion. When about 19 or 20 years of age the daughter developed symptoms of neurasthenia, and for four years was treated by various methods until finally a "rest cure" was proposed, and she was taken to a nursing home for this purpose. A few days later, in the absence of the nurse, she had destroyed that young life, out of which all brightness and joy had gone.

I will now turn to the brighter side of my paper, and give a few illustrations of what can be done for the relief of insomnia, and also of some of the difficulties that have to be surmounted, particularly the scepticism of the patient as to the possibility of glasses being of use for such a purpose, especially if the sight is good or an oculist has already been seen.

The writer of the following letter was with difficulty persuaded by her doctor to consult me, for she could not believe that her eyes were responsible for the insomnia from which she had been so long a sufferer, as she had seen an oculist, and her glasses were quite satisfactory, so far as she knew, and she could see quite well with them. Fortunately for her, the doctor insisted, and she came. I modified her reading glasses, and ordered some for constant use. Three months later she wrote: "I am sleeping wonderfully better since you saw me in May."

The following was a case of very long standing, but I never despair of relieving any case of insomnia if the patient will carry out my instructions to the letter. He writes:—

> When you stated so confidently that you could cure my insomnia and depression I could not believe it, for I had suffered from these attacks for more than 20 years. They came on at intervals, and lasted for several weeks, and had increased in severity in recent years. While they lasted I felt incapable of transacting any business satisfactorily, *and life did not seem worth living*. Since adopting your remedy I have been perfectly free from any symptoms of this trouble.

A clergyman had suffered for nearly two years from spells of insomnia, accompanied by frequent attacks of palpitation, and a great feeling of "nervousness." The doctor who sent him to me diagnosed these conditions as due to eyestrain, which proved to be the case, although he would have passed the visual test as "practically normal." He reported subsequently:—"The effect of the glasses has been decidedly good. 1. The palpitation has passed away. 2. The nerves are quieter, and normal sleep has returned. You have a most grateful patient, I assure you."

What a number of our own professional brethren have perished as the result of insomnia and nervous breakdown, and the verdict has been suicide, or, more mercifully, "misadventure." I have seen many who have been very near such an end, and patients have often told me afterwards how greatly they had been tempted. I remember very vividly the case of a comparatively young doctor, about 38 years of age; and his professional brother, who was attending him, came to talk over the details before sending him to me, and expressed his anxiety as to suicide or insanity. He had been taking drugs for his insomnia for some time, and his depression was extreme. It can well be imagined with what pleasure I read the letter which came from him about six months later. I may say that he had had glasses previously to my seeing him, but had not experienced much need of them, and had used them very little. He writes:—

> I am at present doing double duty, as my colleague is away through illness, so you may guess I am feeling very fit to be able to cope with this difficulty. I am glad to tell you that the giddiness, insomnia, and other nervous symptoms have all disappeared, and I am now feeling bright and energetic—in fact, as well as I have ever felt in my life. Of course, I wear religiously the glasses you ordered for me. Do you remember how I complained of most acute nausea and heart distress when travelling by rail? Well, that has also completely gone. I shall always feel grateful to you for what your skilled advice and sympathetic treatment have done for me, and I can conscientiously say that I can attribute my improvement to nothing else.

By treating what I look upon as the initial cause of insomnia or nervous breakdown, we are able to anticipate more permanent results than are usually obtained from the use of drugs and other forms of treatment, which are in many cases only palliative and temporary in their effects. This point is well illustrated in a case reported in a former paper of mine published in THE LANCET[1] nine years ago on Slight Errors of Refraction and their Influence on the Nervous System, and I will briefly refer to it again. The patient, a minister, had suffered for two years from severe headaches, insomnia, and giddiness, resulting finally in a complete nervous breakdown. He had given up all hope of ever being any better, and he told me later that he dared not sleep in an upstairs room, and had given up shaving as he was afraid he might yield to the temptation to commit suicide. The doctor had the usual difficulty in getting him to come to me, as he had seen an oculist in London, and was using glasses with which he could see quite well. I changed his glasses for reading, and gave him glasses for constant use, and he wrote me six months later: "After ten weeks of hard and anxious work I am still holding my own. Refreshing sleep has become habitual, after a long period of insomnia, during which I was quite a wreck, as you know, and with sleep strength began to return, and life, which had been a burden, is now a delight." This patient has been to see me recently and tells me he has been actively engaged in his work since his visits to me in 1903.

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[1] THE LANCET, June 10th, 1905, p. 1573.

Another very interesting case occurred in my practice a few years ago, but in this instance giddiness was a more pronounced symptom than insomnia. A lady had suffered from severe attacks of giddiness for several years, becoming so giddy that she was afraid to go out of doors unattended, frequently had to leave the breakfast table, and if she went to church invariably had to come out. She had sought advice from many physicians in Belfast, Dublin, and London, but without relief, and ultimately came to Harrogate. She was somewhat taken aback when the doctor whom she consulted here after a careful examination and a patient hearing of her history advised her to consult me. She at once said she had already seen the first oculists of the day, and quoted the names of six whom she had consulted. Probably most doctors would have accepted that statement as final, and given up all idea of further treatment in that direction. Fortunately for the patient that did not happen, and I saw her. I gave her glasses, both for distance and reading, and she soon began to improve, and wrote me 12 months later:—

> You will be pleased to hear that I have had practically no vertigo, have had no prolonged attacks since with you last July, and even the swift little turns have not troubled me now for some months. I never have to leave the table, and, indeed, may say that I am practically free, as I go on the roads freely and never feel distressed, so if that only continues I shall be the happy woman I am at present.

Does this case not show that it is absolutely necessary, firstly, that the physician should be aware of slight refractory error as an initial cause of insomnia, and, secondly, that the ophthalmic surgeon to whom he may send the patient should also be aware of it, and should possess the combination of care, perseverance, and skill necessary for the detection of very slight errors, accuracy in estimating the amount of such error, and tact and judgment in getting his treatment effectually carried out? Failure resulted in this case up to a certain point from a lack of this combination, but in the end complete success was achieved by the confident persistence of her Harrogate doctor, together with the pair of spectacles she obtained in consequence of it.

The writing of my paper was at this point interrupted, and in the short interval of 24 hours before resuming it rather striking coincidences have taken place. In the first place, in my daily paper another of those painful suicides is related; the rector of a parish having written the following letter, was found dead in a pool with a bullet wound in the head: "Another sleepless night; no real sleep for weeks. Oh, my poor brain, I cannot bear the lengthy, dark hours of the night; dazed, confused, I know not what I am doing. God have mercy on me, and raise up friends to my poor wife." Do not these cases cry out to us for more strenuous efforts?

As illustrating the prevalence of it, three patients have in that short time sought my advice for insomnia, one from Ipswich, one from Dublin, and one from my own town, Harrogate. The last, after trying various methods of treatment for nearly two years, tells me that it has at last been suggested by a specialist in London that his eyes might be the cause of his trouble; and that undoubtedly is the case.

Thus far I have given a few illustrations of cases of long standing and of severe type, and if it is possible to give complete relief in such, may we not entertain great hopes for the future? Is it not also an inducement to those who have hitherto been sceptical to test the matter thoroughly for themselves, and gradually to acquire that experience which is so necessary for the surmounting of those many difficulties one meets with in obtaining satisfactory results? The natural inference, too, is that if cases of this kind were seen in the early stage there would be a ready response to treatment; and, if so, what a contrast financially alone to those of limited means—a pair of spectacles *versus* a sea voyage, three or four months in Switzerland or elsewhere, six or seven weeks in a home for so-called "rest cure," and so forth.

A few letters will suffice to demonstrate this ready response to treatment. A doctor who was perilously near a nervous breakdown was enabled to continue his work and wrote:—

> I have persevered continuously with the glasses you prescribed for me in May last with the greatest satisfaction. There is distinct improvement in the tone of my general health, and the depression, irritability, and insomnia are relegated to the memories of the past. I could not have anticipated such good results, and tender my sincerest thanks.

The following case of nervous breakdown from insomnia and dyspepsia occurred in India. The patient was sent home to consult a certain physician in London, and ultimately came for a course of treatment to Harrogate. After being here six weeks he was in despair as he had derived no benefit. A friend of his then suggested that he should see me. He was much surprised, as he had particularly good vision, but came nevertheless, and the constant use of glasses soon helped him. He wrote from India:—

> It is now nearly six months since I was fortunate enough to come under your care, and I am writing to let you know how I have fared. From the time I started to wear my glasses I began to feel an improvement in my general health, so much so that before I left home in December last I was feeling much better in every respect, and since my arrival in India I have continued to mend until now I feel more or less like my former normal self—in fact, an altogether different man, both eating and sleeping well, whilst my indigestion is almost a thing of the past.

A similar case, a doctor of music, writes: "I am glad to tell you I am in really good health again. I sleep well and my nervous system is stronger than it has been for a long time. All my work, both public and private, has been quite satisfactory and I can now enjoy life."

Before closing this paper may I venture on just one suggestion as to the great prevalence of functional nerve troubles and the cause thereof? I have often heard two special causes mentioned, "the strenuous life of the present day" and "the influence of heredity." With both of these I cordially agree, if I may supplement them thus: "The influence of the strenuous life upon those whose nervous systems have been already considerably taxed by the presence of refractive error." Do we not see many men leading the most strenuous lives possible, and yet whose nervous systems never falter, and, on the other hand, those whose nerves are shattered, but whose lives have been anything but strenuous? As to heredity, its influence is shown in that the *initial cause* of the neuroses—*refractive error*—in one generation is so frequently *transmitted*, and gives rise to similar neuroses in the next. Do we not have instances of two brothers, or two sisters—the one with a normal, evenly balanced nervous system and normal refraction, the other with *inherited refractive error*, and the highly strung *neurotic* temperament?

It is my firm conviction that it is from the more general recognition, both by physicians and ophthalmic surgeons, of what I have indicated as the initial or predisposing cause, and the earlier and more effectual treatment of it, that we must hope for a diminution of this appalling number of suicides, and that relief and happiness may be brought to that vast number, who, victims of insomnia and neurasthenia, or "nervous breakdown," are dragging along a miserable existence.

Harrogate.

EXPERIMENTS ON THE GERMICIDAL ACTION OF COLLOIDAL SILVER.

BY W. J. SIMPSON, C.M.G., M.D. ABERD., F.R.C.P. LOND.,
PROFESSOR OF HYGIENE, KING'S COLLEGE, LONDON;
AND
R. TANNER HEWLETT, M.D. LOND., F.R.C.P. LOND.,
PROFESSOR OF BACTERIOLOGY IN THE UNIVERSITY OF LONDON.

SOME years ago Mr. Henry Crookes[1] observed a peculiar action of some metals in inhibiting the growth of bacteria in their neighbourhood. This was afterwards recognised as being due to a germicidal action brought about by the metals being in a colloidal state. We have recently carried out some experiments on the germicidal properties of colloidal silver in the form of a liquid, collosol, prepared by Mr. Crookes. The experiments were all carried out on the typhoid bacillus by the following methods:—

1. *By the Rideal-Walker or drop method.*—In this the disinfecting power of collosol on the typhoid bacillus in water was compared with that of phenol under identical conditions, the maximum period of exposure to the disinfectant being 15 minutes. We have found that within this period even a 1 : 2000 solution of collosol does not kill the typhoid bacillus (i.e., within 15 minutes), this being only just accomplished by a 1 : 500 solution. This result indicates that collosol would be somewhat slow in acting if used as an ordinary disinfectant. The preparation is, however, too expensive to be employed and is not suggested for this purpose.

2. We next tested collosol by the method suggested by Mr. Crookes—viz., the collosol solution was mixed with nutrient broth so as to give a 500 per 1,000,000 strength. Other dilutions of this were prepared—viz., 100, 50, 25, 10, and 5 per 1,000,000 with nutrient broth, and six tubes, each containing 10 c.c. of these various dilutions, were prepared and inoculated with one drop of a 24-hour broth culture of the typhoid bacillus. The inoculated tubes were incubated at 37° C. and subcultures were made after 24 hours. It was found that no growth occurred in the inoculated tubes except in the weakest dilution (5 per 1,000,000). Subcultures made with three loopfuls from these tubes similarly showed no growth with the exception of the subculture made from the 5 per 1,000,000 dilution.

As the determinations made by the Rideal-Walker method indicated that a greater strength than this—viz., 1 : 500—would be required to be efficient for short exposures, experiments were made as above by the method suggested by Mr. Crookes, but subcultures were made from the inoculated tubes at 15 minutes, 30 minutes, one hour, and two hours after inoculation, in addition to 24 hours. The result was that growth occurred from most of the dilutions after 15 and 30 minutes' exposure, as shown by the following table:—

—	Subcultures made after					Original tubes after three days.
	15 min.	30 min.	One hour.	Two hours.	24 hours.	
500 per million	+	0	0	0	0	0
100 ,, ,, ...	0	0	0	0	0	0
50 ,, ,, ...	+	+	0	0	0	0
25 ,, ,, ...	+	+	0	0	0	0
10 ,, ,, ...	+	+	+	0	0	0
5 ,, ,, ...	+	+	+	0	+	+

+ = growth; 0 = no growth in the subcultures.

This again shows that collosol is somewhat slow in acting, the best results being obtained only after more than one hour's exposure. It was thought that it might be interesting to test mercuric chloride in the same manner for the sake of comparison. A fresh 1 : 500 aqueous solution of mercuric chloride was made and diluted with broth in precisely the same manner as the 1 : 500 collosol, and tested as in the last-named experiment. The results were as shown in the subjoined table.

—	Subcultures made after					Original tubes after three days.
	15 min.	30 min.	One hour.	Two hours.	24 hours.	
500 per million	+	0	0	0	0	0
100 ,, ,, ...	+	0	0	0	0	0
50 ,, ,, ...	+	+	0	0	0	0
25 ,, ,, ...	+	+	0	0	0	0
10 ,, ,, ...	+	+	+	+	+	0
5 ,, ,, ...	+	+	+	+	0	0

Ammonium sulphide was added to neutralise any mercuric chloride carried over. The results obtained with mercuric chloride are therefore very similar to those obtained with collosol, but if anything the mercuric chloride proved more inhibitory than collosol in the original tubes. It is to be noted that in the presence of the peptone, &c., of the broth the mercury is largely transformed into a colloidal state and evinces its great activity.

There can be no doubt from the foregoing experiments that colloidal silver in the form of collosol is an active germicide. We understand that the collosols are non-poisonous and have been administered internally.

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[1] See Chemical News, May 8th, 1914, p. 217.

ROYAL INSTITUTION.—The managers have elected Professor C. S. Sherrington, M.D., F.R.S., to be Fullerian professor of physiology for a term of three years dating from Jan. 13th next. Among the lectures arranged to be given at the Royal Institution before Easter are three by Dr. Henry G. Plimmer on Modern Theories and Methods in Medicine: (1) Medicine and Science; (2) Immunity; and (3) Methods and Results. Dr. Chalmers Mitchell will give three lectures on Zoological Studies: War and Evolution. Sir Rickman Godlee is announced to give one of the Friday evening discourses, which will begin again on Jan. 22nd.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OPHTHALMOLOGY.

Exhibition of Cases.—Necessity for an Exact Definition of Blindness.

A MEETING of this section was held on Dec. 2nd, Mr. PRIESTLEY SMITH, the President, being in the chair.

The PRESIDENT made sympathetic reference to the death on the battlefield of Mr. Angus MacNab, an active member of the section, and proposed a resolution of sympathy with his family, which was passed.

Dr. ROSA FORD showed a case in which an Eyelash Pierced the Lid Border backwards.

Sir ANDERSON CRITCHETT showed a patient with Small Optical Iridectomies in a case of lamellar cataract. He described the operation, which was initiated by his father 50 years ago, and narrated cases so treated in which the result was very permanent.—Mr. W. H. H. JESSOP spoke favourably of the procedure, which he had himself carried out with great success in adults as well as in children. In one case operated upon 22 years ago the result was as good to-day as at the time.—Dr. ANGUS MACGILLIVRAY said he had done the operation described several times. The results by removal of the lens were not as satisfactory in lamellar as in other forms of cataract.

Mr. LESLIE PATON showed a case which he regarded as Mikulicz's disease, and gave his reasons for the view.—Colonel R. H. ELLIOT referred to a case of the disease which he published in the *Ophthalmoscope*—that of a Hindu woman, aged 49, in whom the lacrymal glands on both sides bulged like short horns, and the accessory portions of these glands projected into the conjunctival sac. The parotid, sublingual, and submaxillary glands showed fulness. Removal of the lacrymal not only improved the appearance, but was followed by subsidence of the other glands. The tissues removed presented a close resemblance to the appearance of round-celled sarcomata.

Mr. H. ROBINSON exhibited a case of Irido-cyclitis, and Mr. H. L. EASON one of Bilateral Temporal Hemianopia, to illustrate the importance of taking the fields of vision in every case of optic atrophy. The patient, though he had seen many ophthalmic surgeons, became so blind that he had to be led about. His fields had not then been tested. He could make out moving objects and lights on the nasal side only. The onset of blindness within six months was unlike the history of the optic atrophy of tabes, and Mr. Eason thought he might have pituitary tumour. Within a month of taking thyroid he got remarkable improvement of vision. He still took the extract, for if he went long without it he noticed a relapse. The sella turcica was somewhat enlarged.

Mr. W. T. HOLMES SPICER showed a case with Angeioid Streaks.

Mr. HAROLD B. GRIMSDALE, in opening a debate on the Necessity for an Exact Definition of Blindness, stated that the importance of defining, if possible, the condition of blindness had long exercised the minds of those concerned in the teaching and maintenance of the blind, and the recent awakening of public interest in the question made it all the more urgent to clear away doubt. On the recently appointed committee on the subject he was the sole representative of ophthalmic surgery; he had therefore invited this section of the Royal Society of Medicine to try to arrive at something like unanimity on the question. Many members of the profession whom he had asked found it impossible to define the status of a blind child otherwise than was done in the Act of 1893—namely, that for educational purposes a child shall be considered blind who is too blind to read the ordinary school books. Yet all children who did not come into this definition were not fit for the ordinary school—for instance, subjects of high myopia. It was desirable to have some rule for evaluation as a guide in each case. Many factors must be taken into account, and these concerned both the state of the patient and his employment. Both central acuity and the state of the peripheral vision must be considered, as well as the relative value of the two eyes, and the presence or absence of binocular vision. For certain employments a greater acuity was needed than for others. Those having no perception of light were but a small proportion of those ranked among the blind, while among children the proportion was still smaller. Among adults the blindness from optic nerve atrophy and glaucoma led to a preponderance over children. In a blind school of 68 children 8 had no perception of light. In Boston, Mass., of 2021 eye patients 0·6 per cent. were totally blind, 7·7 per cent. "practically blind," with a vision less than 6/60 of normal. These figures were not a guide, because totally blind persons would not seek relief. The blind persons in the United Kingdom number about 27,000, according to the Census, but this could not be accurate. The ratio of the totally blind to the economically blind was about 1 to 9. The causes of economic blindness in children differed considerably from those in the adult. In the former, the chief trouble was loss of central acuity from corneal conditions, while in adults disease of the optic nerve with contraction of the visual field operated chiefly. There was evident a tendency to make the standard of vision too high, and thus throw a large number of children into the "blind" class. One reason was that a child with bad sight demanded more individual attention from his teachers than the others, and so constituted a drag on the class as a whole. This was a stimulus to put such child into a special school. This might ensure his education being better looked after for the time, but once labelled "blind" he was liable to be drafted into a blind workshop. The co-education of the blind and the seeing was one of the most interesting experiments which had been conducted; the blind child was first started in a special school until he had mastered the elements of Braille writing and reading; then he took his place among sighted children in the universal school, and often competed successfully with normal children. The capacity to read separate letters was a very different matter from being able to read words; from experiments he found that the "near" acuity as measured by reading words was often more than twice the distant acuity measured on single letters. Often so-called blind children tried to read Braille by sight in preference to by touch. He contended that between the "blind" school and the normal school there should be a third school for children who had such visual defect that they could not be taught by the aid of the blackboard. His suggestion was that a distant acuity of 6/60 should be taken as the highest limit of vision for a blind school child. Those whose vision was better than 6/24, unless otherwise recommended by a medical man, he would send to an ordinary school. All special schools should be inspected at least once a year, and the vision of each child tested and recorded. Among the blind there would always be two classes: those who could not see at all or scarcely so, and those who could distinguish large objects, and so could guide themselves by their eyes in unfamiliar surroundings. Given a good field an acuity of well below 3/60 enabled a man to move freely in the outside world; hence he regarded 6/60 as too high a standard below which a man should be regarded as practically blind. Mr. Grimsdale then dealt with the question in relation to various trades, and in conclusion suggested the appointment of a subcommittee to deal with the question in all its bearings. It was undesirable that a Bill on the subject should pass through Parliament without any reference to the opinion of that section of the Royal Society of Medicine, for in that case most difficult questions would be left to the decision of absolutely unqualified amateurs.—Mr. W. M ROCKCLIFFE said that for many years he had advocated some definition of blindness. The Local Government Board defined blindness as "Too blind, in the opinion of the Local Government Board, to perform work for which eyesight is ordinarily required." Others expressed it as "Blind for the practical purposes of life." During 30 years he had examined and admitted into a blind school large numbers, and his decisions had not been questioned. He divided cases into (*a*) blind and (*b*) partially blind. The latter were those who were able to differentiate fingers at a greater distance than three feet. There should be a clear distinction drawn between capacity for ordinary school education and for technical education. A good broad distinction was those who could count fingers at three feet and those who could not. There should be a clear decision as to who should be participants in pensions for the blind. —Dr. MACGILLIVRAY said that for industrial purposes so-called blind people could be divided into three classes: (1) totally blind, those who had no perception of light; (2) practically blind, those possessing perception of light but were unable to take part in industrial occupations owing to marked impairment of vision; and (3) the partially blind, whose defect prevented them obtaining employment in ordinary sighted workshops, their vision yet being such as to disqualify them from entrance to a blind institution. 30 per cent. of the inmates of blind institutions belonged to the category partially blind. He discussed the case of children and the general question in relation to occupations. —Mr. N. BISHOP HARMAN contended that there was only one exact definition of blindness—the dictionary one—"want of sight." But the term was used to include many varieties of partial blindness, and for those that definition was sought. Vision was a complex act: acuity, field, mobility, mentality, and effects of difference of lighting, habit and custom, all took a share in the sensation. It was not possible by any sufficiently simple definition to gather up possible varieties, any one of which might constitute partial blindness of serious order. Any definition must be related to the facts of life, must have reference to the person's capacity for work. If it could be certified that he was incapacitated from engaging in profitable labour by reason of his defect, his was a state of blindness. Any attempt to pass a definition of blindness drawn in professional terms, to operate through the Legislature, was, he contended, doomed to failure, and was liable to be altered out of recognition. The definition in the Elementary Education Act, "inability to read the ordinary school books used by children," was worthy the judgment of Solomon, for it defined blindness in terms of life. He pointed out the parallelism of the case of mental defectives, in which also reference was to life. He advocated a certification of blindness by two independent and duly approved medical men, who should be required to state their opinion, and the facts upon which that opinion was based; such opinion being subject to the scrutiny of the medical officer of the proper authority.—Mr. F. RICHARDSON CROSS thought the Legislature was rightly attacking this question. If a child's sight was such that it could not attend the ordinary school, some other arrangement for its education must be made. There were blind schools for those nearly blind, and intermediary schools for myopes. Anything brought forward to deal with the infirmity in adults would not influence the good work being done for the children. Ophthalmic surgeons should agree among themselves as to a proper definition of a blind person. He thought it would be unsound to take the view that the layman was unable to judge on this matter. He thought the Registrar would accept two classes. One would embrace those who had no more than perception of light; the other either Snellen's types or finger-counting, the latter for preference. Anyone who could not count fingers at a greater distance than a yard should be regarded as practically blind. In order to be practical he thought that at first there should be some sacrifice of scientific precision; this could perhaps be arrived at later.—Mr. HOLMES SPICER contended that the persons to decide this question should be expert ophthalmologists, not lay members of a county council. Any rules arrived at should be for the guidance of expert examiners.—The PRESIDENT pointed out how well qualified this section was for giving expert advice on such a matter, which was of the first importance.

MEDICAL SOCIETY OF LONDON.

Discussion on Tetanus.

A MEETING of this society was held on Dec. 7th, Sir JOHN BLAND-SUTTON, the President, being in the chair.

Captain D. EMBLETON, R.A.M.C.(T.), opened a discussion on Tetanus, with special reference to: (*a*) prophylaxis; and (*b*) the serum treatment of established tetanus, dosage, and method of administration. He said he had had the opportunity of observing, both at the 3rd London General Hospital and recently at Netley, a series of cases showing a very varied picture of the disease. The discussion, he understood, was to be limited to the prophylaxis and the serum treatment of established tetanus. Before considering either of these points two features of the B. tetani must be clearly remembered: (1) the spore; and (2) the fact that the B. tetani was a strict anaerobe. With regard to the spore, it must be remembered that it was exceedingly difficult to kill. It would almost withstand dull red heat and a 1 in 20 solution of carbolic acid took 15 hours to kill it. The disease was produced by the inoculation of the spore, which subsequently developed into the bacillus under suitable circumstances. The inoculation of a *clean* spore—that was to say, a spore which had been washed free from its toxin—would not produce the disease, for it was rapidly dealt with by phagocytosis, &c. In order to produce the disease with a clean spore it was necessary to inoculate at the same time some lactic acid, or some other organisms, or to produce considerable trauma, all of which processes lowered the vitality of, or killed, the tissue locally. With regard to the anaerobicity of the B. tetani in artificial culture the organism would only develop when oxygen was excluded. This had led to the idea that the B. tetani would only develop in the body under similar anaerobic conditions. It was questionable, however, if this careful exclusion of oxygen was necessary in the body for the development of the B. tetani and other anaerobes. For example, there were two organisms which produced septicæmia and multiplied in the blood stream—the B. influenzæ and the B. Welchii. The B. influenzæ would develop artificially only in the presence of oxygen, the B. Welchii only in its absence. This suggested that the presence or absence of oxygen, though important in artificial media, played no essential part in the development of an organism in the body. It had also been shown that the B. tetani would grow artificially without any anaerobic precautions in the presence of other bacteria such as the staphylococcus aureus. Again, Tarozzi's method of cultivating an anaerobic organism was important. Tarozzi showed that if a piece of sterile tissue, such as a piece of guinea-pig's kidney, was placed in an ordinary broth culture the B. tetani would develop even if no further precautions were taken for the exclusion of oxygen. On considering this point it became evident that the piece of organ in the broth must undergo autolysis or self-digestion, and this suggested that tissue undergoing autolysis was important for the development of the B. tetani. A clean tetanus spore would only give rise to tetanus when the tissues were damaged, and damaged tissues underwent autolysis. Thus it would seem that the dead autolysing tissue rather than the exclusion of oxygen was important for the development of the disease. He then considered the nidus and migration of the organism. The B. tetani was said to occur in the disease at the site of inoculation and in the nearest lymph glands only. If this were true it was different to all other bacteria, which seemed improbable. Similar statements had been made concerning various diseases, such as diphtheria and cholera; of both these diseases the organisms had until recently been said to occur only locally, but careful investigation had shown that they could be demonstrated in the marrow and spleen. It was practically certain that the tetanus bacilli migrated rapidly by way of the lymphatics to the thoracic duct, and thus entered the blood stream and became disseminated throughout the body. The majority of organisms were then undoubtedly destroyed, though it should be possible to demonstrate them in the bone marrow, spleen, and urine. The fact that the organisms had not yet been demonstrated was probably due to the rarity of the disease and the difficulty of cultivation. (He, unfortunately, had not yet had an opportunity of searching for them in the human.) It was thus possible that the so-called tetanus toxin might be liberated from many points in the body as well as from the original focus, and this might account for the first spasms starting, as they frequently did, at a distance from the original lesion. It had been recently stated before the society[1] that if a wound was swabbed out with pure carbolic acid tetanus and sepsis would be practically abolished and wounds would heal by first intention. Against this assertion might be raised the following points. 1. 1 in 20 carbolic acid was the most efficient germicidal dilution of phenol. Pure carbolic acid was no more potent than a solution of 1 in 20. 2. 1 in 20 carbolic acid took 15 hours to kill tetanus spores. The disease was caused by spores. 3. It damaged the tissues, and these damaged tissues would subsequently undergo autolysis. 4. Kanthack used broth having a strength of 1 in 20 carbolic acid to isolate and cultivate the tetanus bacillus. 5. Dr. F. H. Thiele and he (Captain Embleton) had also shown that carbolic acid (1 in 20 or pure) swabbed on to a wound artificially produced in a guinea-pig and infected with spore-bearing organisms would not protect the animal, even when applied two minutes after the infection had been produced, the bacteria even in this short time having migrated beyond the range of the antiseptic. To sum up, pure carbolic acid appeared to be of little value in the prevention of tetanus and in the treatment of septic wounds, and, in fact, by damaging the tissues, seemed dangerous. The same argument also applied to the use of other strong antiseptics. The fact that the tetanus bacilli had only been demonstrated in the wound and the nearest lymph glands showed that the blood could deal with the organisms as long as it could gain free access to them. This suggested that in cleaning the wound no substance likely to damage the tissues should be used and that free access of blood to the part should be ensured either by hot baths, fomentations, or Bier's method. He then dwelt on the prophylaxis. The value of antitetanic serum for prophylactic purposes he held had been definitely established, both experimentally on animals and also from statistics in the case of man. It was probable that nearly every wound received by our troops operating in the highly manured districts of France and Belgium was infected with tetanus spores, but only a relatively small number of cases of tetanus occurred. Theoretically every wound should thus be treated with serum. This, of course, would be practically impossible. It had been suggested that since all wounds could not be treated prophylactically only shell and shrapnel wounds should be so treated; this would include the majority of cases, but he had seen a case of tetanus in a man wounded with a rifle bullet. The probability of tetanus arising appeared to depend upon the extent of laceration and consequent liability to infection and not on the nature of the projectile. With regard to the prophylactic dose of antitetanic serum much work had been done and the results were well known. It was manifestly impossible to lay down hard-and-fast rules as to what was and what was not a prophylactic dose. One frequently had to decide what dose was to be given and when, to a man who was to be operated upon and who had been exposed to tetanic infection several days previously. It must be borne in mind that the patient might be in the incubation period of tetanus, and might have a large nidus which would be stirred up during the operation. Ideally, at the time of operation a sufficient dose of antitetanic serum should be circulating in the patient's system. It seemed probable that 6000 units some three hours before the operation should suffice. He then considered the treatment of established tetanus. He said that with regard to the use of hypnotics it should be remembered that these were given not to cure the disease but to relieve symptoms which were otherwise inimical to life, such as fixation of the chest and suffocation, or continuous spasms, producing marked mental distress and exhaustion. On the other hand, the central nervous system was being severely poisoned by the tetanus toxin, and unless there was urgent need for the use of hypnotics it would seem safer to withhold them. The hypnotics which seemed to have given the best results were chloral and bromide or chloretone, and for rapid action paraldehyde and ether suspended in saline and administered intravenously. It had been proved experimentally on animals that the administration of antitetanic serum in established tetanus was of value. To be of use, however, the serum must be given very soon after the first appearance of the symptoms. In man the value of serum treatment was still doubted by many. It had been shown, however, that if the dose given was very large the beneficial results following the use of serum became manifest. It had been stated that if the cranial nerve nuclei other than the fifth were involved the patient would die whether serum was given or not. If the cranial nerves were not involved it was probable that the case would recover without any treatment. This he was not inclined to agree with without further proof. It had been shown that the so-called tetanus toxin gained access to the central nervous system along the axis cylinders of the nerves, and had been suggested that the antitoxin should be injected into the nerve trunks running to the lesion, under the impression that the serum would neutralise the toxin and prevent its passing to the central nervous system. Non-diffusible substances such as serum would not pass up the axis cylinders, but would run up the perineural lymphatics to the intervertebral foramina where these lymphatics left the nerves. The routes of the toxin and antitoxin were thus different. *Intrathecal inoculation* of antitetanic serum had been much advocated in the treatment of established tetanus on the assumption that the antitoxin could by this means get into rapid and intimate contact with the toxin in the affected nerve cells. This was based upon an erroneous conception. There was no evidence that non-diffusible substances such as serum could penetrate to any depth into the nerve tissue when injected either into the subarachnoid space or into the lateral ventricle. On the other hand, there was experimental evidence that it could not do so. Substances inoculated in this way rapidly passed into the big venous sinuses and lymphatic channels. Thus, this method was merely another way of giving an intravenous inoculation. Roux had published a series of experiments in which he got very satisfactory results by injecting antitoxin into the frontal lobes, but non-diffusible substances such as serum when injected into the brain either leaked back along the track of the needle and so reached the cerebro-spinal fluid or remained localised at the point of inoculation. Flexner's experiments with poliomyelitis virus showed that in the case of an infection the infection could in time spread from an inoculation in the cerebral lobes to the cord. Thus it was possible that a small amount of tetanus antitoxin might be directly absorbed and pass along to the affected areas. Roux's experiments were, however, definite, and it was necessary to re-examine them from other points of view. In tetanus the tension in the cerebro-spinal fluid had been found to be very much increased. It was possible that the relief of tension followed by a pouring out of fresh fluid might have produced the same beneficial results in tetanus as it did in meningitis. The amount of serum that could be inoculated by this route without severely lacerating the cerebrum or ploughing a way into the ventricles or subarachnoid space was exceedingly small. The *intravenous route* for the injection of serum would probably be the easiest and best, but it had this danger, that it might produce acute anaphylactic symptoms or death in a person primarily hypersensitive to horse serum or in a person who had previously been inoculated with an antiserum of any sort prepared from the horse. The *subcutaneous route* was undoubtedly the safest, since the absorption was slower and violent anaphylactic symptoms were less likely to occur. The absorption, however, was sufficiently rapid for the purposes of treatment, and very large quantities could be given. It would take too long to discuss the nature of the toxin and the mode of interaction of the toxin and antitoxin, but he believed that the toxin was produced by the digestive action of the serum or tissues of the infected animal on primarily non-toxic tetanus protein; and that the action of the antitetanic serum was to hasten this process of digestion, so that there was no accumulation of such toxic substances. The object of administering antitetanic serum was to (1) destroy the circulating toxin; (2) promote phagocytosis of the tetanus bacilli; and (3) destroy the toxin already causing symptoms to the central nervous system. Immediately after the first symptoms of tetanus appeared, 10,000 units should be inoculated, and subsequently 3000 units every two hours until the symptoms abated. The inoculation of serum should not, however, be continued beyond the third day, for by this time the tissues would have become sensitive to horse serum, and would produce from the horse serum toxic anaphylactic substances, and at the same time would destroy the antitoxin of the serum, so that it would be of little value. Hypnotics should be withheld until the severity of the spasms or the exhausted condition of the patient demanded relief. When given they should be exhibited in sufficient quantities to produce a marked effect.

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[1] THE LANCET, Nov 21st, 1914, p. 1200.

Professor F. W. **ANDREWES** urged that the tetanus bacillus was not an inhabitant of soil, as such, but of the animal dung with which cultivated soil is mixed. The risk of tetanus was that of deep implantation in wounds of cultivated soil or other matter polluted with the dung of horses or cattle. In any given wound this risk might be roughly estimated by the evidence of such contamination either on clinical or bacteriological grounds. The bacteriological test on which he was disposed to place chief reliance was the presence of anaerobic bacilli in the wound discharges. A smear of the pus stained by the Gram-fuchsin method was commonly a sufficient clue to their presence. Unless an unlimited supply of antitoxin was at hand it was necessary to exercise some selection of cases in the administration of tetanus antitoxin as a prophylactic. He considered the presence of large Gram-positive bacilli, resembling B. aerogenes capsulatus, a good indication for a prophylactic dose of serum. The evidence went to show that 500 U.S.A. units was an adequate prophylactic dose in ordinary cases, since it is known to be enough to protect a horse. 1000 units might be safer in a severe and very foul wound, or one in which a considerable time had elapsed since its infliction. He considered it right to give serum in a suspicious wound, even though two or three weeks had passed since the infliction of the injury. As regards the treatment of the declared disease Professor Andrewes expressed himself in favour, on theoretical grounds, of amputation or free excision of the wound, where this was possible. The route of administration of antitoxin which he advocated was the intrathecal one, as being better than the subcutaneous or intravenous routes and safer than the intracerebral one. Statistics showed clearly that, when employed, antitoxin should be given in large doses—15,000 or 20,000 U.S.A. units repeated as necessary. As an adjuvant to keeping up a high concentration of antitoxin in the central nervous system, large doses should also be given subcutaneously. More, however, could not be expected from antitoxin than that it should turn the scale in doubtful cases. In the use of sedatives for the palliation of pain and other symptoms it must be remembered that death was often due to respiratory complications, and that such drugs as morphia might in some circumstances be dangerous.

Dr. **JOHN EYRE** said that he was quite in accord with what Professor Andrewes had said with regard to the value of finding Gram-positive organisms resembling B. aerogenes capsulatus in the discharge from an infected wound, but he had met with several cases of tetanus in which they were not found. Inoculation of a mouse caused tetanus after two or three days. It was clear, therefore, that a decision as to treatment must depend mainly upon the surgical aspect of the case. Badly lacerated, contused, or deeply incised wounds were those which should be chosen for prophylactic treatment against tetanus. Referring to treatment with carbolic acid, he pointed out that the spore was not the entity which gave rise to the toxin, but the bacillus, which was very susceptible to the influence of carbolic acid. The site of production of the toxin should, in his opinion, be dealt with as soon as possible. With regard to the prophylactic dose, 500 units probably afforded good protection if they could be used immediately. The amount required, however, increased rapidly with delay, and at the end of 24 hours from infection 20 or 30 times as much was needed. The serum conferred immunity for about a week, and at the end of that time a second dose was necessary. When tetanus had become established, though on theoretical grounds, it was well to get rid of the site of manufacture of the toxin, in experimental work infection did not remain localised to the focus of inoculation. He thought that intracerebral injections, in view of the grave lesions produced, should only be used as a last resort, though they sometimes seemed to turn the scale. The intrathecal route was the most important and efficient. In his own experience cases treated thus had usually recovered, whilst those only receiving subcutaneous injections had usually died. The cerebro-spinal fluid was often under considerable pressure and ran freely away, so that a considerable dose of serum could be given. Intravenous inoculation acted quickly and subcutaneous slowly, but the latter kept up a persistent dosage. He advised that all three methods should be employed simultaneously.

Lieutenant **R. B. BLAIR**, R.A.M.C., said that he had treated 17 cases of tetanus at the Herbert Hospital, Woolwich; 6 had died, 9 recovered, and 2 were still under treatment. Ten cases were very acute. The wounds were mostly severe and all very dirty. They were generally gunshot wounds, not shrapnel. In 4, prophylactic doses of serum had been given before they entered the hospital; 3 of these had died, and it would seem that the doses they had had were small and not given early enough. He thought that unless the patients were seen within two days 4000 units should be given intraspinously. The treatment which he had employed at the hospital for the cases of established tetanus was intrathecal injection of 4000 units daily. No difficulty had been experienced using a light anæsthesia. The cerebro-spinal fluid was under very great pressure; it was allowed to run until it began to drop slowly and then the serum was injected, the volume introduced being less than that which ran away. The hypnotics used were morphia, chloral and bromide (60 grains of each 2 or 3 times in the 24 hours), and chloretone (40 grains in 2 ounces of olive oil, 2 or 3 times daily, per rectum). When the chloretone was retained it relieved the spasms for several hours, but it was often rejected. Stimulants might be necessary if exhaustion appeared. It was seldom necessary to amputate the limb during the attack of tetanus; in the few cases in which this had been done all but one succumbed. The total quantity of serum given varied greatly, 62,000 units being the maximum amount which had been employed.

Dr. **CARL H. BROWNING** said that one point was clear, that the amount of serum required grew enormously with the lapse of time from infection. Consequently, the earliest symptoms of tetanus must be carefully watched for. The danger of anaphylaxis might probably be avoided by the previous injection of dilute solution of antitoxin, and an anti-anaphylaxis thus produced. The blood pressure could be used as an indication of the amount of serum to be injected intrathecally. If there was a fall of blood pressure in an average adult of 40 mm. of Hg the limit of dosage had been reached.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

The Cure of Squint.

A MEETING of this society was held on Dec. 4th, Mr. **ASLETT BALDWIN**, the President, being in the chair.

Mr. **N. BISHOP HARMAN** read a paper on the Cure of Squint. Squint was the loss of the finest function of the human eyes—binocular vision. Confining his attention to fixed squints in children, he said that in a school of 1000 children no less than 18 were squinters, and that girls were nearly twice as much affected as boys. In 1400 children seen at a children clinic on account of poor vision 199 were squinters. The incidence in these cases was from 100 in the years 4 and 5, to 5 in the fourteenth year. Of these 199 cases 166 were fixed convergent squints, 16 alternating convergent, 8 divergent, and the rest were associated with disease of the eyes. After quoting from ancient authors to show that squint was held to have an evil moral significance, he proceeded to trace the evolution of the binocular vision, and the profound effect it had had on the form of man; he maintained that the upright position and "his fair large front" were directly associated with the evolution of vision. The effect on the brain was similar, for the area of visual cortex was incomparably greater in the hunting animals than in the hunted, and greatest of all in man. The control of the eyes he likened to that of the driver of a four-in-hand. A good driver would master a poor team, but the best team was defective without a driver. So the balance of the eyes was maintained by the fusion faculty of the brain; if that were poor then squint would ensue, even though the eyes were good. Defects of the eyes were adjuvant factors. In not a few cases there was a strongly hereditary tendency to squint. Treatment could be put into three grades. 1. Balancing the vision of the eyes. First there must be correction of any error of refraction by retinoscopy, next exercise of the vision of the squinting eye. 2. The awakening of the fusion faculty. This had been first attempted by Erasmus Darwin in 1778, and modern practice was of the utmost value in ascertaining the power of the brain to resume control under favourable condition. 3. Operation. The rationale of this step lay in the fact that squint of any duration was associated with changes in the tendons, and that these acted as insuperable obstacles to the resumption of brain control. In convergent squint the internus tendon was shortened and thickened, the externus thinned and lengthened. If a true cure was to be effected—i.e., the restoration of binocular vision—then if Stages 1 and 2 of the treatment failed to effect a speedy cure operation should be done before time had stereotyped the vicious effects of the squint. If that time had passed then they were no more than beauty doctors intent on removing an ugly cast. The advocate of early and regular operation must be prepared to present an operative procedure which was both expeditious and reliable. And in this connexion Mr. Harman showed photographs of the steps of his combined operation for lengthening the contracted tendon and shortening the stretched tendon. He maintained that effects could only be secure when both the affected tendons were adjusted; indeed, it was the only method whereby the full mobility of the eye could be secured without subsequent deformity. His operation for shortening a tendon, "subconjunctival reefing and advancement," was performed as follows. The tendon was not cut or exposed to view. The upper and lower edges were cleared by two buttonholes cut through the conjunctiva and capsule. The tendon was freshened by a rasp. Special forceps of simple design were then passed into the buttonholes to secure the tendon. The movement of the forceps folded the tendon. The reef was sewn up or advanced as the case indicated, and then the antagonist was lengthened by a graduated partial tenotomy. The steps of the reefing advancement were as follows: (1) The eye was secured with an anchor stitch placed at the limbus in the axis of the tendon to be shortened; (2) the position of the tendon was noted—it was pointed out that there were well-defined surface markings and colour differences; (3) the buttonholes were cut above and below the tendon close to the canthus; (4) the tendon was lifted and both surfaces rasped with the instrument provided; (5) reefing forceps were applied, adjusted to the extent of the shortening required, and rotated; (6) the reef was sewn up by a double over-and-over stitch; and (7) the reef was advanced by fixing the stitches into the limbus. Then the antagonist was lengthened by the "jigsaw" operation. The tendon was exposed, secured in "director-forceps" which checked bleeding and gave a guide to the incisions. Three cuts were made—athwart the tendon, the middle extending two-thirds from one edge, and the lateral each one-half across from the other edge. The tendon thereon extended lengthwise without loosing its attachments or alignment. Mr. Harman showed how the cuts could be varied to secure vertical deviation also. Results: Of the first 100 serial cases, including the early experimental operations, the results obtained after the average interval of nine months were: Binocular vision, 4; straight, 36; error less than 3°, 22; less than 5°, 23 (these make 85 per cent. successes); error 10° (since corrected), 9; over that, 4; relapsed six months after operation during severe keratitis, 1; and over-correction found six months after operation, 1. He had now almost completed the second hundred cases, and the percentages of successes were still higher. One of the advantages of this combined operation was the power for nice regulation of effects. This was of the utmost importance when operation had to be done early to save the binocular vision, for at an early age a general anæsthetic was commonly needed, and the operator was entirely dependent on his own judgment and technique.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Treatment of Perforating Gastric and Duodenal Ulcers.—Exhibition of Cases.—Intestinal Stasis.

A MEETING of this section was held on Nov. 13th, Dr. F. CONWAY DWYER, the President, being in the chair.

The PRESIDENT read an address on the Treatment of Perforating Gastric and Duodenal Ulcers. For many years he had given up lavage, which he believed to be extremely harmful and responsible for many untoward results. He removed the septic fluid with large swabs and relied on pelvic drains for getting rid of any fluid left behind. Formerly he was of opinion that gastro-enterostomy should be done if the patient's condition permitted it, but in the 12 cases he described he had performed it only in one instance, and then only because the perforation was so large and the edges so friable that when the rent was sewn up he feared the lumen of the bowel was too much narrowed. Eight of the 12 cases made a complete recovery, three did not survive operation more than a few days, and one died a fortnight after operation from pneumonia.

Mr. H. STOKES showed a case of Regeneration of Ruptured Sciatic Nerve. The case was one of arthritis of the hip-joint accompanied by intense pain. Operation was performed for excision of the hip-joint, in the course of which the sciatic nerve was accidentally ruptured. The injury to the nerve was not discovered for two or three weeks. Two and a half years had elapsed since the operation, and the patient was shown to demonstrate the amount of regeneration that had taken place. The suturing of the nerve was done about three weeks after the excision. The small loss of sensation now present in the case was remarkable.—The PRESIDENT considered the absence of wasting in the limb astonishing.

Mr. W. C. STEVENSON showed cases treated by Radium Emanation Needles. From the first patient a malignant polypus was removed by Mr. Graham in May last. It subsequently grew again, and the whole of the anterior wall of the antrum had to be removed, but again the tumour began to grow. The patient came under Mr. Stevenson's care in the end of June with a large gland on one side and a smaller one on the other, accompanied by considerable proptosis. He inserted six needles into the gland, and two or three days afterwards six more needles were put in, and left in for 24 hours. After six weeks the tumour got smaller and redder. When the needles had been inserted four times the tumour showed considerable diminution. A recurrence of the swelling having taken place six weeks after the first application further needles were applied, and the patient showed the effects of the radiation. He had put on a considerable amount of weight. Although he had to take hypnotics regularly before, since the radiation was started he was able to get on without them. Another patient shown had been pronounced by Professor McWeeney to be suffering from epithelioma of the palate. The condition seemed to be much improved, and the ulcer now seen was only about half its original size.—The PRESIDENT said that he had no experience of the application of radium except what he had gained from a short visit to the Middlesex Hospital, where Sir Alfred Pearce Gould had under treatment a large number of cases. In some of them what would seem to have been an almost miraculous cure was brought about. Sir A. Pearce Gould informed him, however, that some of the cases disimproved with extreme rapidity after radium, and that it was wholly impossible to say whether in any particular case a cure would be brought about or whether the patient would be made worse.

Mr. A. J. M. BLAYNEY read a paper on Intestinal Stasis, but the discussion on it was postponed to the next meeting of the section.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held at the Metropolitan Hospital on Dec. 4th, Dr. David Ross, a past President, being in the chair.—Dr. Anthony Feiling read a paper on Acute Paraplegia, of which the following is an abstract. The question of prognosis must always be important in acute paraplegia, or paralysis of the lower limbs of rapid onset. Accurate diagnosis is essential before any prognosis could be given. Hence a knowledge of the various pathological processes which may cause this condition is necessary. These are chiefly three: (1) poliomyelitis; (2) acute myelitis; (3) acute peripheral neuritis or toxic polyneuritis. Poliomyelitis is, of course, identical with infantile paralysis, and is an acute inflammatory disease of the central nervous system; the spinal cord, however, suffered most frequently and most severely. The majority of cases of acute myelitis are in reality syphilitic in origin, the pathological process being a double one, a gummatous meningitis and a softening of the cord following thrombosis of the vessels from endarteritis. The introduction of the Wassermann reaction and the characteristic changes in the cerebro-spinal fluid have confirmed the opinion previously held as to the syphilitic origin of the majority of these cases. The pathology of toxic polyneuritis is less certainly understood; alcohol is very often the etiological factor. The clinical features of these three conditions are often characteristic. The patient's age is an important point of distinction. In poliomyelitis the characteristic features are a day or two of constitutional disturbance, followed by the abrupt onset of paralysis; pain was often a marked feature; objective sensory loss was very rare, and the sphincters were not affected; hypotonia was a prominent feature of the paralysis. The residual paralysis is always less extensive than that present at the beginning of the disease. The patient with acute syphilitic myelitis is generally older. After a few days, in which prodromal symptoms, such as tingling and numbness, may be felt, the paralysis sets in rapidly, and in the course of a few days is usually complete. At first flaccid, it later becomes spastic with exaggeration of the deep reflexes and extensor plantar responses. Loss of sensation is marked and often complete up to a definite segmental level, affording a great contrast to poliomyelitis; it may be of the type known as dissociated anæsthesia. The sphincters are invariably affected, the commonest condition being retention of urine with overflow and obstinate constipation. The final result is a spastic weakness even when considerable recovery had occurred following adequate treatment. In toxic polyneuritis the following points were, said Dr. Feiling, useful in diagnosis: (1) Sensory symptoms are usually most marked; (2) motor paralysis is usually less complete and tended to involve the distal parts of the extremities more than the proximal; (3) the anæsthesia is not segmental in type, and like the motor paralysis involved chiefly the distal parts of the limbs; (4) hyperæsthesia is often a marked feature especially in the alcoholic cases; (5) the sphincters are not affected; (6) rapid muscular atrophy with electrical changes in the muscles supervenes; and (7) there is of course no change to a spastic type of paralysis. The author passed over such cases as the paraplegia of Pott's disease, meningitis, and spinal tumours. Two diseases, he said, had yet to be mentioned in which a sudden paraplegia may occur. These were tabes dorsalis and disseminated sclerosis. In the tabetic cases the paraplegia was usually temporary, and a diagnosis could only be reached by careful consideration of the symptoms, especially pupillary changes. In disseminated sclerosis it would sometimes happen that the further course of the case with its characteristic remissions would provide the only clue. The paper was illustrated by microphotographs and specimens illustrating the pathological lesions of poliomyelitis, tabes dorsalis, and disseminated sclerosis.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on Nov. 26th, Mr. J. Jackson Clarke, the President, being in the chair.—Dr. H. Crichton Miller opened a discussion on Drug-habit and its Treatment by Modern Methods. He said that the treatment consisted of two stages: (1) the withdrawal of the drug, which could be carried out largely on group lines; and (2) the "cure proper," or a reconstruction of the patient's whole mental and nervous dispositions on natural lines. The latter could only follow strictly individual indications. Having spoken of the causes and of the procedures which are employed in the withdrawal of drugs he considered the "cure proper." This was closely related to the etiology. He spoke of the rôles played by psycho-analysis and hypnotic suggestion in this part of the treatment.—Dr. J. F. Woods recounted his experiences of the treatment of 25 cases of drug-habit.—Mr. Campbell Williams, Dr. R. H. Cole, Mr. Ernest Clarke, Dr. W. H. Willcox, and Dr. J. A. Davidson also took part in the discussion.

ULSTER MEDICAL SOCIETY.—A meeting of this society was held in the Medical Institute, Belfast, on Nov. 26th, Dr. J. S. Morrow, the President, being in the chair.—Dr. W. Calwell showed several cases, chiefly of dermatological interest.—Dr. H. L. McKisack exhibited a case of Acromegaly.—Mr. A. B. Mitchell showed a case of Solid Œdema of the Face, a case of Ichthyosis, and an Excised Gall-bladder with a large number of gall-stones.—Dr. T. S. Kirk showed a specimen from a case of Ulcerative Colitis treated by excision.—Mr. A. Fullerton exhibited a case of Skin Grafting of Upper Eyelid and a case of Club Foot treated by tarsectomy.—Dr. T. Houston exhibited a series of cases of Acne, showing the results of treatment by vaccines.—Dr. J. C. Rankin showed a series of cases of Lupus Vulgaris, a series of cases of Rodent Ulcer which exhibited Lenthal Cheatle's distribution, and also a case of Lupus Erythematosus.—Mr. Howard Stevenson showed a case of Bone Transplantation after removal of sarcoma of the femur.—Dr. T. Killen showed a specimen of Calcified Hydrocele of the Tunica Vaginalis Testis, and also a specimen of Meningocele successfully removed from a child aged 3 weeks.

MR. W. W. Coltart, L.R.C.P. Lond., M.R.C.S. Eng., having resigned the position of medical officer to Epsom College, which he has held for 28 years, the council has appointed as his successor Mr. P. Jenner Verrall, M.B., B.C. Cantab., F.R.C.S. Eng.

Reviews and Notices of Books.

Lumley's Public Health Acts.

Eighth edition, in two volumes. Edited by ALEXANDER MACMORRAN, M.A., K.C., and JOSHUA SCHOLEFIELD, Barrister-at-Law, assisted by GERARD R. HILL, Barrister-at-Law, and KENNETH M. MACMORRAN, Barrister-at-Law. London: Butterworth and Co. and Shaw and Sons. 1914. Pp., Vol. I., ccclxx., 1205, and (Index) 232; Vol. II., ix., 1392, and (index) 232. Price £3 15*s*. net.

FORTUNATELY for those whose duties render necessary the inclusion in their libraries of the latest edition of "Lumley's Public Health" this valuable and scholarly text-book is not republished frequently. The seventh edition came out in 1908, and in the six years which have intervened about 20 Acts of Parliament requiring some kind of notice in such a work have been passed. These include at least one of importance, the Housing and Town Planning Act, 1909, which is fully set out and occupies 30 pages. Others, such as the National Insurance Act, if not directly concerned with the public health contain sections under which sanitary authorities are affected, which are more or less briefly noted.

The great difficulty in such a compilation is the avoiding of unwieldiness, which in the matter of mere physical dimensions can hardly be escaped from. The cases decided under the Public Health Act, 1875, together with its sections, which of course are set out in full, have brought the number of pages required for adequate dealing with the one statute, the principal one, up to 700, and it is not surprising that the growing bulk of the two volumes, for which four members of the Bar are now responsible, should have caused them some anxiety. In the circumstances, they assure us they have made every effort to secure brevity so far as this is possible without leading to obscurity or omitting details which those using such a book ought to have at their disposal. It is satisfactory to find that some curtailment has been achieved and that it has been effected by shortening the references to cases in the notes, and other expedients explained in the preface, and not by abridgment of the statement of the facts upon which decisions cited are based or of the decisions themselves. This is of obvious importance in the case of a work which, as the editors justly claim, is often used in places where law reports are not easily procurable, "use" in this connexion implying, as they might have added, not merely consultation by those investigating the law upon a particular point for their own guidance, but citation and acceptance in courts of law.

It is hardly necessary to say that medical officers serving local authorities in the great and general movement developed in recent years for the protection of the public health have had to become lawyers with a corresponding abandonment of their functions as medical practitioners. Further, a working knowledge of the special branch of the law which concerns them is essential to the proper fulfilment of their duties, and their influence for good must largely depend upon their appreciation of their own powers and limitations, and of the powers of the sanitary authorities whose guides and counsellors as well as servants they are. Such a working knowledge of public health law will certainly be his who, having obtained intimacy through practical experience with the Acts and regulations applying to his routine duties, has learned to "know his way about" in "Lumley's Public Health." In doing this he will, however, be aided by a copious and well-arranged index, conveniently repeated in each volume, by a table of statutes, and a table of contents and table of cases, the fulness and careful arrangement of these guides to the searcher leaving nothing to be desired. It cannot be too often impressed upon compilers of legal text-books, and particularly of those which are for the guidance of lay officials in their duties, that it is not merely the matter which they include in a weighty volume, but the degree in which they render it accessible, which will win the appreciation of their readers.

The eighth edition of "Lumley's Public Health" will no doubt command the appreciation which the usefulness of its predecessors will have helped to win for it. Its purchase by local sanitary authorities for the benefit of those in their jurisdictions and for the use of their officers is therefore to be recommended, as its cost without being prohibitive or excessive in view of the value of the book itself, might be a heavy charge for the individual pocket.

Chemistry and its Borderland.

By ALFRED W. STEWART, D.Sc., Lecturer on Organic Chemistry in the Queen's University of Belfast. With 11 illustrations and 2 plates. London: Longmans, Green, and Co. 1914. Pp. 314. Price 5*s.* net.

THE purpose of this book is admirable, and in our view the author has succeeded in presenting "an account of some recent developments in chemistry couched in language which need not present any impediment." He realises that an interest in the progress of scientific investigation is more and more manifest, and that on all sides an intelligent curiosity is springing up as to the meaning of recent advances in science. Chemistry in its application to industrial operations is not easily explained to the ordinary man, and the chemist often resorts to a symbolic language which is unintelligible except to the initiated. The author takes the position that works on chemistry designed for the general public are apt to err either in being too elementary in treatment or in taking too much knowledge for granted on the part of the reader. We agree; and we are glad to find that in his lucid account of the subject no chemical symbols have been introduced, while elementary truths have not been laboured. The result is a readable and interesting account of the bearing of chemical developments on modern life.

Amongst other things the author brings forward the fact, which is not very generally appreciated, that all the applications of science which render our life more endurable have had their beginnings in the workshop of researchers who were striving after knowledge for its own sake. He draws attention to a few well-known instances in modern chemical research, in which the first efforts seemed to be of merely academic interest, but which have proved the foundations of far-extending industries, providing employment for thousands of men. We have not read a clearer or more interesting account of chemistry in its relations to daily life and modern needs. The chapter on immuno-chemistry, even with the words he is bound to use—like haptophore, toxophore, receptor, and so on—serves as a very good example of the author's clear exposition and writing, and should free this complicated subject from the ambiguities which may exist in the minds of many readers. The chapters on colloids and the ultra-microscope, chemistry and industry, the inert gases, chemistry in space, and transmutation, are equally good and attractive, but the book is at its best, we think, on the vital questions of food and power in the future and in its treatment of the chemical problems of now and afterwards.

Syphilology and Venereal Disease.

By C. F. MARSHALL, M.D., M.Sc. Vict., F.R.C.S. Eng., Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars; formerly Resident Medical Officer to the London Lock Hospital. Third edition. London: Baillière, Tindall, and Cox. 1914. Pp. 465. Price 10*s.* 6*d.* net.

THIS work has reached a third edition in a few years, and we are not surprised that it has been received with favour by the profession, for it contains a clear, careful, and complete account of syphilis and the other venereal diseases. About three-fourths of the book are devoted to syphilis, and it is evident that the subject has been fully thought out. Each chapter contains a very useful list of references to original authorities.

The section dealing with the treatment of syphilis is especially good, and the author adopts a wise position as to the relative values of mercury and salvarsan. The chapters on chancroid and on gonorrhœa are good, and there is a section dealing with venereal disease and public health which deserves special mention. A very important part of this chapter relates to syphilis in connexion with life assurance, and it should prove of value to junior life assurance officers.

Festschrift Herrn Dr. H. Bircher,

Direktor der Kantonalen Krankenanstalt, Aarau (Schweiz), und Chefarzt der Chirurgischen Abteilung, zu seiner 25-Jahrigen Amtstätigkeit, überreicht von Freunden und ehemaligen Assistenten 1887–1912. Tübingen: H. Laupp. 1914. Pp. 523. With 1 portrait, 129 figures, 1 chart, and 1 curve. Price 18 marks.

Dr. Heinrich Bircher has been a man of many activities in Aargau for the last quarter of a century, we read in a dedicatory address at the beginning of this *Festschrift*, and has been the source of the inspiration resulting in the 20 papers that compose it. His portrait shows the face of a masterful man, not unlike that of the Member for Waterford.

In the Aargau district of Switzerland there is a great deal of goitre, and during Dr. Bircher's 25 years 1529 operations on the thyroid gland have been performed, 1425 in benign goitres, 56 on malignant goitres—carcinoma or sarcoma—and 48 upon goitres showing signs of inflammation. Over two-thirds of the benign goitres occurred in women; in all cases a general anæsthetic was employed, and post-operative fever, occurring in half the patients operated upon in 1890, was seen in but 16 per cent. of the cases in 1911. The recurrent nerve was injured in 2½ per cent. of the operations, and the operations proved fatal in 2¼ per cent. of the cases. About 300 pages of the *Festschrift* are devoted to various aspects of the goitre problem, and the four papers in which they are considered are worthy of a careful study. Dr. E. Bircher, in a general account of goitre, comes to the conclusion that the enlarged thyroid gland must produce a special toxin that is responsible for the more or less serious cardiac troubles ("Kropfherz," goitre-heart) that occur so frequently in these patients, and brings forward arguments to prove that the disease is due to a colloid toxin occurring in many Swiss drinking waters. W. Bigler, in a paper on the Cardiac Lesions of Goitrous Patients, says that his material includes about 150 cases, 100 of them carefully observed; in 50 patients with tracheal stenosis due to the enlargement of the thyroid, 23 only showed cardiac hypertrophy, so that mechanical causes can hardly underlie the enlargement of the heart. He found that no histological type of goirte was constantly associated with the cardiac disturbance, and does not think that any quantitative upset of the secretory activity of the thyroid gland will account for it; in fact, he leaves the connexion between goitre and goitre-heart unexplained.

Many other of the 20 papers composing the *Festschrift* are excellent pieces of work, and the whole volume affords abundant evidence of the vitality of surgery, medicine, and pathology in Switzerland.

LIBRARY TABLE.

Cane Sugar and Heart Disease. By ARTHUR GOULSTON, M.A., M.D. Cantab. London: Baillière, Tindall, and Cox. 1914. Pp. 107. Price 5*s.* net.—Having in view the use of sugar in the German army and among Alpine climbers to sustain them under severe cardiac strain, the author was induced to try the effect of pure cane sugar in the treatment of various kinds of heart disease which failed to respond to ordinary treatment. His first case was that of an enfeebled lady, 74 years of age, who suffered from fluttering heart, with rapid, irregular, and intermittent pulse. Under the cane sugar treatment she gained strength and vigour, and ten years later is quite well, walks out daily, and travels alone. The author discusses the subject of heart failure, the physiology of cane sugar in relation to heart muscle, and gives the details of his method of treatment, which consists in the administration of 2 oz. of pure cane sugar daily for the first week, 3 oz. for the second week, and 4 oz. from then on as long as required. Total abstinence from alcohol and tobacco is enjoined, diuretics are given if required, and rest and plain diet enforced. The class of cases in which he claims to have seen almost constant benefit includes auricular fluttering and pseudo-angina pectoris due thereto, auricular tachycardia, valvular lesions after acute rheumatism, and tobacco heart. He records 20 representative cases with a few illustrative tracings. The cases are carefully taken clinical records, not always by himself. The book is suggestive, but the cases are hardly sufficient in number to justify any general conclusions or wide claims.

The Progress of Scientific Chemistry in Our Own Times. By Sir WILLIAM A. TILDEN, D.Sc., F.R.S. Second edition. London: Longmans, Green, and Co. Pp. 366. Price 7*s.* 6*d.* net.—The first edition of this interesting, though small, volume appeared in 1899, and we are glad it has now been succeeded by a second edition bringing the subject matter to date. We are not aware that a clearer or more concise account exists of the successive steps which have led to the system of theory generally accepted by chemists at the present day. Professor Tilden has done wisely also to add to each chapter a series of biographical notes of the great founders of chemical science. These notes are naturally placed at the end of the chapter in which their work of laying foundations is described. In this way the connexion between discovery and general progress is usefully brought out. The story is told in simple terms, and it presents a most interesting record of chemical science.

Pathologie Interne et Diagnostic. By ROGER HYVERT. Second edition. Paris: A. Maloine. 1914. Pp. 510. Price 6 francs.—This compact work, which forms one of the series of guides to practical medicine, having been favourably received in its first edition, is now put forth as a second edition which has been entirely revised. The author has arranged the various symptoms and diseases in alphabetical order, and under each heading has given a succinct account of the condition. The book may indeed be described as a dictionary of medicine, and in the small space at his disposal the author has collected much information which will serve as a compendium for immediate reference by the busy practitioner. A useful feature is the tabulation in the index of the various reactions, signs, and syndromes, alphabetically under the names of the various observers who first described them and after whom they are now known.

The Sanitary Inspector's Handbook. By ALBERT TAYLOR, Sanitary Inspector, City of Westminster. Fifth edition, with illustrations. London: H. K. Lewis. 1914. Pp. 612. Price 6*s.* net.—Now that this book has been brought up to date, with references to recent new regulations in sanitary administration, it again forms, as previous editions did, a very useful guide to the sanitary inspector. He will appreciate mostly, we think, the clear statements given as to his duties and the requirements in regard to them. The chapters on house drainage, drain testing, baths, sinks, and water-supply are particularly good, and the chapter on infectious diseases and disinfection is extensive and practical. The author displays a wide experience of the work that falls to a sanitary inspector.

German Technical Words and Phrases. An English-German and German-English Dictionary. By C. A. THIMM and W. VON KNOBLAUCH. Second edition, revised and enlarged. London: E. Marlborough and Co. Pp. 241. Price 2*s.* 6*d.*—The preface to this edition states that the dictionary is not intended to compete in any sense with the literary and commercial German dictionaries in the market. It is distinguished from these in supplying professional and business men with words, terms, and phrases peculiar to their respective callings and occupations, and necessarily of a scientific or technical character. A supplemental list of 20 pages has been added to this edition with cross references where necessary. In this list we observe rugine and scraper both translated as "zahnmeissel." "Zahnputzer" would have been more correct for tooth-scraper or dental rugine. Zahnmeissel, or dental chisel, also conveys the idea of a toothed chisel or toothed-plane-iron used for veneers in cabinet-making. It is easy with the German "Zahn" prefix to confuse "denticulated" with "dental." There are a few other misprints, such as "scoffolding," "steimasse," and "makalatur," but these are not important. Since its size will enable it to be carried in the waistcoat pocket it is a useful little book.

MISCELLANEOUS VOLUMES.

The war is such an all-absorbing topic at the present time that books bearing upon its etiology, symptomatology, and prognosis will have interest for our readers. Yet the selection of the numerous works having their origin in the war which lies before us does not contain any really valuable work.

First by its extensive aims comes the *Diplomatic History of the War*, edited by Mr. M. P. Price (London: George Allen and Unwin, Limited. 1914. Pp. 344 + 102. Price 7*s.* 6*d.* net), and we do not attempt critically to review it. All we shall do is to indicate the task the author has set before himself, and our general opinion as to how far he has succeeded in accomplishing it. He professes, then, to have collected and reproduced the various official documents of the various Governments and the public speeches in the European Parliaments, to which he has added texts of treaties bearing on points of importance and some of the more important press correspondence bearing on the war. From these data he has arranged a chronological diary of events, and has prefaced the whole with a historical introduction purporting to examine why the conflagration has spread from Eastern Europe, and "to uncover the methods by which the diplomacy in the different capitals has worked, leading Europe to the inevitable and disastrous end." He interlards this review with running comments indicating where, in his opinion, blame or praise seems justly to be deserved. We cannot regard the result as satisfactory in this last respect, as there seems to us a too evident bias, due to the author apparently having read his conclusions into the data instead of having drawn them therefrom. As a collection in one volume of much official material for students of the subject it may be useful. The recent publication of the French Yellow Book, however, must materially add to the cumulative weight of the Allies' case.

Of General Friedrich von Bernhardi's book, *Germany and the Next War*, translated by Allen H. Powles (London: Edward Arnold. 1914. Pp. 288. Price 2*s.* net), it is here necessary only to state that it sets forth the doctrines of "Might is right" and "World power or downfall," which have been the predisposing causes of the present war conflagration. We suppose that no one who reads the book can fail to see that with such a viewpoint dominant in any nation that nation must sooner or later find the civilised world in arms against it. Let us hope that if no middle way comes to the surface between the author's alternatives the triumphant one will not be world power.——In *The Kaiser's War* (London: George Allen and Unwin, Limited. 1914. Pp. 251. Price 2*s.* net) Mr. Austin Harrison sets out to expose the entire German philosophy of the war. Starting with the origin of the "world power or downfall" idea, he shows the growth and dominance of the materialistic "might is right" conception, which leaves out of account the moral forces of mankind. The Kaiser's diplomatic mistakes before he embarked on war are noted, and a like number of military mistakes, Mr. Harrison thus essaying to dispose of the Kaiser's claim to the title of a great monarch. Following the methods of criminal investigation, Mr. Harrison next essays to "reconstruct" the German case. A chapter on the collapse of Socialism is intended to show up the falsity in practice of the claims to solidarity and internationalism on the part of Socialism and will not prove in the least convincing. A comparison of the guiding principles and methods of England and Germany closes an interesting book.——Dr. Armagaard Karl Graves, who was sentenced in 1912 to 18 months' imprisonment as a spy, having already been 108 days in custody, lays bare in *The Secrets of the German War Office* (London: T. Werner Laurie, Limited. 1914. Pp. 182. Price 2*s.* net), the inner workings of German secret intelligence methods. The last chapter, Arming for Peace or War—the manuscript of the book, the publishers assure us, was in their hands last June—starts with the assertion that "the map of Europe is certain to undergo some very decided changes within the next decade, very possibly in less time." He sets forth the essential racial distinctions between the three great groups of European nations, the Teutonic, the Latin, and the Slavic, and it is easy to see that to his thinking the odds are in favour of success for the Teutonic race, for which, in addition to the commercial and military pre-eminence of Germany, he seems to rely on two factors: 1. The fact that there is no Catholic ruler in a Catholic country to-day able to support and protect the dignity of the Church, while the German Emperor "is a Protestant monarch, but he is first and last a Christian." 2. That the Scandinavian races trust Germany but not Russia. This is an interesting book, but we have no means of gauging its accuracy.——Mr. J. M. Kennedy's *Nietzsche* (London: T. Werner Laurie, Limited. 1914. Pp. 192. Price 1*s.* net) is an attempt to show, by means of representative quotations from Nietzsche's writings, that those who regard him as the founder from a spiritual, if not from a political, point of view of the new Germany, are greatly in error, and that the idea at present so prevalent in England that the influence of Nietzsche's writings was a dominant factor in producing the present war is entirely baseless. It may be true that Nietzsche "loathed the very name of empire," and that he severely criticised the Germany of his own time, and in even stronger terms the Germany which was developing out of it; but it seems to us that, without going beyond the quotations given by the present author, the doctrines of Treitschke and Bernhardi constitute but a logical application in a contracted sphere of principles which underlie Nietzsche's teaching. Mr. Kennedy lays himself open to criticism when he states in the preface that "the 'Christianity' attacked by Nietzsche in the following pages is 'the lifeless Christianity of the Lutheran Church.'" The statement seems to us entirely disproved by passages about the New Testament quoted on p. 185 of the work. The book is far from convincing.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

Meeting of Comitia.

A Comitia was held on Dec. 3rd, Sir Thomas Barlow, Bart., K.C.V.O., the President, being in the chair.

The following communications were received:—1. From the secretary of the Royal College of Surgeons of England, dated Nov. 12th and 13th, reporting proceedings of the Council of that College on Nov. 12th. 2. From the Foreign Office, dated Nov. 4th, thanking the College for their communication concerning the sale of narcotic drugs.

Sir Dyce Duckworth, the treasurer, announced that the Finance Committee had recommended that the sum of 50 guineas should be presented to the Belgian Doctors' and Pharmacists' Relief Fund.—The recommendation was adopted.

Dr. J. E. Squire presented to the College two old clinical thermometers in use up to 1870, which had belonged to his father, Dr. William Squire.—The thanks of the College were returned to Dr. J. E. Squire for the gift.

Dr. Newton Pitt was elected a Censor in the place of Sir Wilmot Herringham, M.D., resigned.

Dr. A. E. Ormerod, the Registrar, presented for approval of the College certain new regulations for the award of the Weber-Parkes prize. Hitherto the prize had been awarded triennially to the writer of the best essay upon some determined subject connected with the etiology, prevention, pathology, or treatment of tuberculosis. A silver medal had been awarded to the holder of the prize, and a similar medal, distinguished as the second medal, to the essayist who came next in order of merit. According to the new regulations, which were adopted by the College, the prize would be awarded triennially for the best work already done in connexion with the etiology, prevention, pathology, or treatment of tuberculosis; a silver medal would still be awarded to the holder of the prize, but the "second medal" would be discontinued.

A report was received and adopted from the Committee of Management, dated Nov. 17th. The report recommended that the Newcastle-on-Tyne Royal Grammar School should be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics.

The President then dissolved the Comitia.

THE LANCET.

LONDON: SATURDAY, DECEMBER 12, 1914.

Medical Certification under the National Health Insurance Act.

THE National Health Insurance Commissioners for England, Scotland, and Wales have decided to bring into operation a new system of medical certification, and have issued to all concerned a Memorandum explanatory of the procedure to be adopted. The Commissioners, we may be certain have known for some time of the difficulties; they have arisen in the working of the Act out of the absence of uniformity in the method of giving certificates, and have often been alluded to in our columns. Faulty systems adopted by the administration of various Approved Societies have played their part in these difficulties, but must not be regarded as alone responsible for them. They have been also brought about by the embarrassment of medical men, whose professional education, though highly standardised in the direction of the prevention and treatment of disease, had been neglected (and surely naturally) in directions where the filling up of forms plays so important a part. The demands of the officials of some societies in respect of certificates have been unjustifiable, but at the same time we do not deny that there has been a laxity of procedure on the part of certain members of the medical profession; it is to meet the unsatisfactory position which all allow has existed from the earliest working of the Act that the National Health Insurance Commissioners have framed a new scheme of procedure. The scheme applies to all cases in which insured persons need medical certificates of incapacity for work, in support of claims either for sickness or disablement benefit, or, indeed, for any purpose under the Act; although, for the sake of brevity, the term "Sickness Benefit" is used throughout the Memorandum.

The scheme will come into operation on Jan. 1st, 1915, and has two objects. The first, as will be gathered by what we have said, is to secure the necessary measure of uniformity of procedure on the part of Approved Societies, insured persons, and practitioners in respect of those matters which can satisfactorily be made subject to definite rules; the second is to bring about a general understanding amongst all concerned as to the procedure to be followed in various exceptional contingencies which cannot satisfactorily be dealt with under formal rules. The first object is immediately achieved. Uniformity will be secured by the fact that every medical certificate of incapacity of insured persons for work must be given on a form determined by the Commissioners. The forms will be issued to practitioners through the Insurance Committees in compact books, and the notice of sickness required by the Approved Societies showing declaration of the incapacity, claim for benefit, and declaration "off" benefit, are printed on the same form as the medical certificate, a procedure which manifestly makes for simplicity and economy of labour. Every certificate will bear the date of signature, which will normally be the date on which the doctor made the examination of his patient, and the times of giving certificates are to be governed mainly by the arrangements which the practitioner makes for seeing the patient in the ordinary course, "and will bear no necessary relation to any system adopted by the insured person's society of paying benefit on some particular day of the week." We quote here the words of a wise provision in the Memorandum. It is one which the Approved Societies can without much difficulty to themselves make arrangements to meet, while it will remove considerable trouble from practitioners who have hitherto been pressed to sign certain documents by certain dates, and will relieve the insured persons from anxiety as to the fairness of any time arrangements under which their benefits are received. The uniform medical certificate includes a description of the cause of incapacity, and the practitioner is required to certify not only as to whether the insured person is incapable of work, but also as to the specific disease or bodily or mental disablement which is the cause of the incapacity. One of the Rules which have been settled by the Commissioners for the giving of medical certificates, and which are appended to the Memorandum, deals adroitly with a difficult point in this connexion. It is obvious that the exact cause of incapacity ought sometimes to remain a matter of confidence between the patient and his medical man, and this point of view is strongly supported by the whole medical profession. The Rule in question provides that "in any case where a precise statement would in the practitioner's opinion be prejudicial to the health of the patient, or where it would inflict on him unwarrantable injury, the practitioner may describe the incapacity, disease, or disablement in less precise terms." In these cases the practitioner is required to send, on the day on which the certificate is signed, to the Approved Society of which the insured person is a member, an additional notice declaring that he has stated the cause of incapacity in his certificate with less precision than his present knowledge warrants, for good and sufficient reasons which he has communicated to either the Government referee appointed for the purpose, or, where no such referee has been appointed, to the Commissioners themselves. The practitioner of course will send also to one of the indicated authorities the precise description alluded to in his declaration. The Rule has been carefully designed to meet a situation where public policy and professional right feeling have been at variance, and we think that working under it should be smooth in the future.

The procedure to be adopted with regard to second, intermediate, and final certificates is carefully explained in the Memorandum. The practitioner is required to give the second certificate, if so desired by the insured person, within eight days of the first certificate, when, if he is satisfied that the patient, although incapable of work up to that date, is fit to resume immediately after, his second certificate will take the form of a final certificate. Otherwise further certificates are to be given from week to week during the period of incapacity. The final certificate must be given by the practitioner, whether asked for by the insured person or not, directly the conclusion is reached that the patient is fit to resume work immediately after the date of the examination, and to this certificate the insured person must add on the same form his declaration off the funds of the Approved Society for delivery to that body. The difficulties to which medical practitioners have drawn attention as affecting the giving of final certificates are well summarised in the Memorandum. They arise in respect of persons who are found on examination to be found not quite fit for work, but likely to be fit within a few days. In the absence of precaution the patient may not see the practitioner until some days after he has become fit for work. The medical man will not then be able to certify personally as to the day on which the patient became capable of work; and the insured person will not be able to obtain a final certificate, since the latter, in the form now required, is not only a certificate of fitness to resume work after the date of examination, but also a certificate that the patient has, in medical opinion, been incapable of work up to and including that date. To meet this situation the practitioner is required to insert in the proper space on the first and intermediate certificates the date on which the patient should pay a further visit, if at the time of giving the certificate the practitioner is satisfied that the patient, though not fit to resume work immediately, will be fit before a further certificate would next ordinarily be given. Other situations, where the giving of certificates is for one reason or another attended with difficulties, have been amply provided for, and we congratulate the Commissioners on a scheme which has been carefully thought out to meet the troubles which cluster round medical certification.

The Treatment of Tetanus.

AT the meeting of the Medical Society of London on Monday last an interesting discussion was held on the prophylaxis and treatment of tetanus, a subject of great importance at the present time when many wounded soldiers of the Allied Forces in Belgium and France have been suffering from this disease. The debate, which is reported in this issue of THE LANCET, was distinctly a success; every speaker was well acquainted with his subject, and those who were present heard the very latest views of the mode in which tetanus is brought about, and first-hand opinions as to the best way of dealing with it. It was only to be expected in so difficult a subject, and one where practical clinical experience has been on the whole so limited, that these opinions did not always coincide in detail.

The debate was opened by Captain DENNIS EMBLETON, who had had opportunities both at the 3rd London General Hospital and at Netley of observing a series of cases presenting a varied picture of the disease. He dwelt on the improbability of any localisation of the tetanus organism, and considered that carbolic acid, even pure and applied two minutes after the infection had been produced, was ineffective, while by damaging the tissues it might be dangerous. He held that the value of antitetanic serum for prophylactic purposes had been definitely established, and that its administration in established tetanus had been proved experimentally to be of value when the subcutaneous route of administration was the safest. Professor F. W. ANDREWES, who followed Captain EMBLETON, pointed out that it was by no means every wound, exposed to the possibility of infection by tetanus, that was really likely to be infected. The main source of the bacillus is to be found in the intestinal excretions of the ox and also especially of the horse, and therefore the mud of the roads is extensively impregnated with this germ; so, too, all soil that has been treated with stable manure must contain very many of the organisms. Dr. ANDREWES described some experiments performed in this connexion; he had taken some of the earth from his garden and had inoculated a number of mice with minute portions of it, and though in some of the cases the amount of soil used was extremely small, yet every single mouse had become affected with tetanus. However, though garden soil teems with this bacillus, it is extremely rare for any gardener to suffer from tetanus, though daily he must have superficial abrasions with which the bacillus must have been smeared. It appeared, then, that superficial lesions were very unlikely to lead to the development of the disease, and this Dr. ANDREWES was inclined to attribute to the fact that the bacillus of tetanus was anaerobic, so that free exposure to the oxygen of the air prevented the development of the organism. This free exposure to the air was, in his opinion, far superior to the employment of hydrogen peroxide or of potassium permanganate. This view did not commend itself to all the speakers, while Captain Embleton had previously laid great stress on the damage of the surrounding tissues as an important factor in the development of the germ, and especially in the associated inoculation of septic organisms.

As to the treatment, all the speakers agreed that the use of antitetanic serum far surpassed other methods that have been devised, and that hypnotic and sedative drugs held a very secondary place in treatment, though they might be useful in relieving pain, in allowing the reception of food, and in inducing sleep. It was also agreed that the serum should if possible be given prophylactically, but at once the difficulty arose that it was practically impossible to administer the serum to every wounded man, for the available stock of serum was utterly insufficient. How, then, can the suitable cases be selected? It seems that deep wounds are more likely to be affected than those which are more superficial, but some further differentiation is necessary, and Dr. Andrewes suggested that the demonstration of the presence of the Gram-positive bacillus of Welch was very suggestive of the presence of the bacillus of tetanus, and so far as he has used this test it appears to be well founded. By some such method the number of cases to which the serum should be given prophylactically may be much reduced. When the dose of serum has been delayed for one cause or another till the symptoms become manifest its value is markedly reduced, but it may be given here with good effect if the dose is greatly increased. The channel of administration has also to be determined. It is curious to note that while one observer favoured the subcutaneous route another considered the intravenous method the best, and a third speaker held that the serum should certainly be injected into the subarachnoid space of the spinal cord; and with this last view we are inclined to agree if a prompt action of the serum be desired. The intracerebral injection found no supporter, though it was admitted that it might be employed in very serious cases as a last resource. The intracranial method must do immense damage to the structures of the brain, unless the quantity of fluid injected be limited to a few drops. It was clear from the whole of this very interesting debate, as well as from the differences of opinion upon the method of administering the accepted remedy, that our knowledge of the therapeusis of tetanus is still in a state of flux. We have in the antitetanic serum an agent of a high degree of potency. Further experience will show us how best it may be used, but at present it is abundantly clear that in its early prophylactic use lies the best hope of combating a deadly disease.

Annotations.

"Ne quid nimis."

UNDERWEAR AND WAR.

The history of underclothing has been neglected, while external costume has been extensively described. Yet underwear, though humble and obscure, has manifestly played an important part in the hygiene of peoples and of armies. Our ancestors were hardy and often cold. Charles I., according to tradition, shivered on the snowy day of his execution (Jan. 30th, 1649), and wore as many shirts as possible next his skin, which seems to prove that the modern vest was then unknown. Drawers, a word of humble origin according to the New English Dictionary, were for ages made of linen or some similar material. Cotgrave, writing in the year 1611, speaks of drawers as short and close breeches or underhose of linen, and in the *Spectator*, No. 51, which was written by Steele, holland drawers are mentioned. The French have an old and well-established word for this article of dress, and in Boyer's French-English Dictionary, edition 6, 1738, we find "*caleçons*" duly referred to and explained by the customary English translation, but these garments must have been short in an age that wore breeches and that prided itself on the contours of what was known as "a leg." In Bailey's Dictionary (1737 edit.) the valuable garment is not referred to, and those who closely examine Hogarth's pictures, such as the "Orgie in the Rose Tavern," will find that it is not worn by the dishevelled beaux and others there depicted. Woollen underclothing dates in England from the second half of the nineteenth century. At first it was regarded as a fad, and is so regarded by the French and Italians to-day. *Caleçons* in France and in Italy are still made of cotton, and are quaint trouser-like garments. An old-fashioned Frenchman in his underclothing presented a curious spectacle. There were so many buttons about him. One such, and as lately as 1890, has described the revolution caused among Frenchmen by the introduction of cotton underwear from England in the time of Louis Philippe or earlier. The English culture-drift, he averred, gave his section of Protestant France, drawers, pietism of the school of Mrs. Fry, and steel pens. He adopted the first and last, and rejected the central product of a leading civilisation. The French are still all for cotton. A young French officer now lying wounded in Le Havre, and loud in his praise of the English Red Cross and the English Tommy, assures us that in his circle the wearing of wool next the skin is regarded as "*vieux monsieur*," or, as we should say, "mollycoddling." We wonder if our gallant allies are properly clothing themselves in their present terrible circumstances. If they are wearing wool next the skin they have passed through yet another revolution, none the less drastic because unseen or obscure. Our own soldiers, on the other hand, are probably better clad, thanks to our knitters, and fed than in any previous campaign. So ineradicable in itself, custom in food and dress has more to do with the hygiene and *moral* of a winter campaign than many suppose.

EPSOM COLLEGE.

WE publish this week a letter from Sir Henry Morris, in which he calls the attention of our readers to the close link between Epsom College and the medical profession. Old Epsomians and others who have identified themselves with the fortunes of the College are not likely to need this reminder; but there must still be many who are unfamiliar with the advantages offered by Epsom College as a school for the sons of medical men, and with the claims of the Royal Medical Foundation of Epsom College upon the generosity of the medical profession and its friends. Owing to the war, which has complicated everything so that scarcely a single wheel of life now revolves at the old rate, money is increasingly difficult to raise for what may be called the peaceable charities. Nevertheless, the Council looks to the friends of Epsom College to bear the needs of the Royal Medical Foundation in mind, so that as the older supporters drop out one by one their places may be filled up and the excellent work of the institution may be carried on with undiminished success.

WHOOPING-COUGH IN NEW YORK.

IN New York City whooping-cough is known to cause three or four hundred deaths per annum, more than half of the victims being infants under one year of age. The director of the City Bureau of Infectious Diseases has determined to cut down this loss of life, if it can be done, by the employment of the following measures.[1] As whooping-cough is infectious for a week or more before the appearance of the characteristic whoop makes it diagnosable, to prevent the spread of infection at the outset is impossible. The Department of Health therefore proposes to concentrate its efforts on protecting infants and very young children from infection with the disease, and on furnishing suitable care for such of them as may contract it. Arrangements have been made to admit certain cases into hospital, where they will be kept until the period of maximum infectivity is over. Other cases will spend the day in "day-camps"; it is hoped that a disused ferry-boat will be available for use as a whooping-cough day-camp, moored close to a children's hospital that will serve as its base of supply. Yet other cases will attend at special whooping-cough dispensaries. In addition, district nurses will devote a large amount of their time to visiting the homes of infected children, advising and educating the parents in the management of the cases and the best methods of avoiding the spread of infection. Whooping-cough is a notifiable disease in New York City, but the notification is made in a very perfunctory spirit, it seems; thus out of 116 institutions, hospitals, and dispensaries caring for cases of whooping-cough, 49 were found not to be in the habit of notifying them to the Department of Health as required by the Sanitary Code. The control of whooping-cough is very much hampered by the incompleteness of our knowledge of the exact cause of the disease. It has not been proved that the same micro-organism is present in every case of pertussis. Most observers have found the minute bacillus described by Bordet and Gengou in 1906, faintly staining, Gram-negative, less pleomorphous than the very similar influenza bacillus that is morphologically indistinguishable from it. As the disease advances the Bordet-Gengou microbe may disappear from the sputum, while the whooping persists. Various strains of this bacillus have been isolated from different cases, and this is a factor of the greatest importance in considering the treatment of the disease with vaccines. It appears also that mixed infections are not rare in whooping-cough; for both these reasons the identification of the infecting agent in any particular case by means of complement-fixation tests is unsatisfactory at the present time. Finally, we still lack definite evidence as to the specific pathogenic action of the bacilli in pertussis. Mallory has recently claimed that the specific lesion consists in the presence of the microbes among the cilia of the epithelial cells in the trachea and bronchi; further work, however, is required before the truth of this interesting hypothesis can be admitted. It will be remembered that Bordet insists that there must be in whooping-cough a specific toxin that produces hypersensitiveness of the recurrent laryngeal nerve and its centre. The vaccine treatment of pertussis is said to have proved disappointing, though harmless, in New York, no doubt for the reasons indicated above.

VENTILATION AND HUMIDITY IN TEXTILE MILLS AND FACTORIES.

THE question of the ventilation and humidity in textile mills and factories has for a long time presented considerable difficulty. The chief problem was how the conditions of the atmosphere in the weaving shed could be so adjusted that at the same time they should be favourable to the operation and without prejudice to the health of the worker. It is well known that in the textile industries the dampness of the atmosphere in which manufacturing processes are carried on is of primary importance, and, as is pointed out by Mr. Cecil H. Lander, M.Sc., A.M.I.C.E., A.M.I.M.E., lecturer in civil engineering in the University of Manchester,[1] this was recognised by the early spinners and weavers, inasmuch as hand looms were often installed in a damp portion of the worker's cottage and the earth floor was watered if necessary and wet cloths hung round or near to the warp beam. On the introduction of the spinning-frame and the power-loom, and the consequent grouping of many machines under one roof, the textile industry tended to rapid growth in districts where the natural amount of atmospheric moisture was great. So the development of this industry took place in moist climates such as prevail in Lancashire and in the north of Ireland. Moisture is, in fact, essential in the production of yarn of maximum strength. Official inquiries have been made from time to time as to the effects of high humidity and temperature upon the health of the weaver, and in one report the general emaciated appearance of weavers was observed, and this was attributed "to the effects of the warm moist atmosphere in which weavers work, for they are not seen in outdoor labourers or in workers in other industries in Lancashire." During recent years the matter, as is well known, has received the attention of the Home Office, and the Factory Acts now require that if the wet-bulb temperature in a weaving shed reaches a certain specified maximum all artificial humidification should be cut off. Mr. Lander has given a very interesting account not only of the general questions of ventilation and humidification but also of the methods and appliances introduced to render a compliance with the requirements of the Act possible without interfering with the conditions essential for manipulating and producing a satisfactory yarn.

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[1] Department of Health of the City of New York. Reprint Series No. 17, May, 1914. J. S. Billings, W. H. Park, and Anna W. Williams.

[1] Ventilation and Humidity in Textile Mills and Factories. By Cecil H. Lander. London: Longmans, Green, and Co. 1914.

THE CLASSIFICATION OF TRYPANOSOMES.

IT is generally recognised that the classification of trypanosomes is a very difficult subject, and hitherto all attempts which have been made to deal with the problem have proved unsatisfactory. A fresh endeavour to overcome the difficulty has recently been made by Surgeon-General Sir David Bruce, Director of the Sleeping Sickness Commission. At the October meeting of the Society of Tropical Medicine and Hygiene Sir David Bruce explained his new system of classification of the African trypanosomes pathogenic to man and domestic animals. His method is based on three principal points—namely, the morphology of the trypanosomes, the action of these parasites on animals, and, lastly, the mode of the development of these organisms in the tsetse fly. With the exception of T. evansi and T. equiperdum all these parasites are carried from sick to healthy animals by tsetse flies. On these grounds Sir David Bruce classifies the pathogenic trypanosomes into three separate groups. The first is the T. brucei group, which includes four species—namely, T. brucei, T. gambiense, T. evansi, and T. equiperdum; the second is the T. pecorum group, comprising two species—T. pecorum and T. simiæ; the third is the T. vivax group, including three species—T. vivax, T. capræ, and T. uniforme. These may be said to constitute all the principal important trypanosomes discovered up to the present time in Africa. As regards the development of these organisms in the tsetse fly, in the first group it begins in the gut of the insect and is completed in the salivary glands; in the second the development commences in the gut of the fly and finishes in the proboscis; and in the third group the whole development of the trypanosome takes place solely in the proboscis of the fly. When this new classification came to be discussed by the Society of Tropical Medicine and Hygiene some members criticised it freely, while others admitting the general soundness of the division into three main groups according to the development in the fly, thought the classification was the best from the zoological point of view. No doubt with some revision the system of classification proposed by Sir David Bruce will go a long way towards removing the chaos which has hitherto surrounded this important subject.

Sir Frederic Eve, senior surgeon to the London Hospital, has sent in his resignation as from the beginning of December, when he completed a period of 30 years' service on the surgical staff. The committee unanimously elected him consulting surgeon to the hospital. Sir Frederic Eve has been appointed by the Army Council consulting surgeon to the troops serving in the Eastern Command with rank and pay of lieutenant-colonel.

THE INDIAN MEDICAL SERVICE.

CORRESPONDENCE relating to the condition of the Indian Medical Service and of the medical profession in India and a despatch from the Secretary of State have recently been issued as a White Paper.[1] The first and longest document is a letter from the Government of India, Home Department, to the Secretary of State, dated Nov. 17th, 1910. This consists, first, of a brief résumé of the position of affairs since Lord George Hamilton's despatch of May, 1899, to the Indian Government, in which he asked whether means could not be found either to reduce the establishment of the Indian Medical Service or to restrict its increase; secondly, a discussion of the measures that might be adopted by Government to assist the development of an independent medical profession; and thirdly, a strong recommendation that the decision in Lord Morley's despatch of December, 1908, against any further increase in the Indian Medical Service should be reconsidered. The second document is Lord Crewe's despatch of Nov. 22nd, 1912, in reply to the preceding, in which he, speaking generally, accepts the conclusions arrived at, and adopts the view that the question of taking measures to promote the growth of an unofficial medical profession must be considered as distinct from that of limiting the cadre of the Indian Medical Service. The third is a letter from the Home Department (Government of India) to the Secretary of State, dated March 5th, 1914, indicating the developments that have taken place during the last three years and the need for an increase in the cadre of the Indian Medical Service.

Proposals in regard to Indian Medical Service.

The view of Lord George Hamilton, expressed in his despatches of 1899 and subsequent years, was that provision for the increasing medical needs of India should be met rather by encouraging the development of an independent medical profession than by increasing the establishment of the existing Indian Medical Service. He considered that it would be beneficial if European medical men were to establish themselves in private practice throughout the country in the same way as in other parts of the Empire, rather than that increased needs should be met by adding to what was primarily a military service. Lord Curzon's government in 1901 concurred in the opinion that the growing needs of India in regard to medical relief should be provided for outside the Indian Medical Service, and welcomed the growth of an independent medical profession, which, however, would be slow and gradual in its development. In 1908 the Indian Government had pointed out that about a third of the civil appointments held by the Indian Medical Service do not form any part of the war reserve, and that therefore from a military point of view there could be no objection to the transfer of these appointments to medical men not belonging to that service; such a transfer would naturally be a gradual process. It is now acknowledged that that opinion had been arrived at without consulting the local governments, and that the objections to the course proposed had been gravely underestimated. With commendable frankness the mistake is acknowledged; it is admitted that the transfer of a certain number of Government appointments from the Indian Medical Service to private practitioners would do practically nothing to encourage the growth of an independent profession; that most of the existing civil appointments held by the Indian Medical Service could not be suitably given to men not in regular Government service; and that the retention of a considerable number of superior civil appointments for the service is necessary, both for making it attractive to good men and in the interests of administrative efficiency.

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[1] Correspondence regarding the Indian Medical Service and the Medical Profession in India. Cd. 7547. Price 2½*d*. Wyman and Sons 1914.

After referring to the different classes of medical practitioners in India, and mentioning proposals for the development of an independent medical profession, it is shown that the orders in Lord Morley's despatch of December, 1908, that there should be no increase in the civil cadre of the Indian Medical Service, and that its strength should be reduced, cause considerable administrative difficulties, and it is strongly urged that they be withdrawn. If this is not done, "the attractiveness of the service will be greatly diminished, the efficiency of the medical and sanitary administration of the country will be gravely impaired, the substitution of inferior for superior men will retard instead of accelerating the spread of Western medicine in India, and a grave amount of discontent, which could not fail to affect recruitment, will be provoked among all the Indian services which are recruited in England." This letter is signed by Lord Minto, Sir O'Moore Creagh (Commander-in-Chief), Sir G. Fleetwood Wilson (Finance Member), and the other members of the Viceroy's Council.

Reply of Secretary of State.

Lord Crewe's reply is short and in general agreement with Lord Minto's proposals. He suggested that as far as possible civil surgeoncies not reserved for the Indian Medical Service should be given to civil assistant surgeons, considering that military assistant surgeons are, as a rule, unsuitable for the work. No reasons for this being the case, and no instances that the unsuitableness actually exists, are adduced, except the fact that they are not recruited with reference to any qualifications for the duties of a civil surgeon. Lastly, the orders against increase in the civil cadre of the Indian Medical Service are withdrawn, the Secretary of State being persuaded that the considerations on which they were grounded cannot now be held sufficient to justify this step. For the two reasons of necessity for economy and desirability of increasing the number of important posts held by Indians, it is, however, still considered that the Indian Medical Service should be restricted to the military needs of the country. Moreover, the conclusions on the whole question are to be regarded as provisional in view of the inquiries to be conducted by the new Public Services Commission.

Letter from Government of India.

The letter from the Government of India, dated March 5th, 1914, refers to the proposed legislation prohibiting the issue of unauthorised medical degrees or diplomas, and introducing registration of medical practitioners, which reforms will commend themselves to all interested in medical education and practice in India. Government are strongly averse from any reduction in the civil surgeoncies held by military assistant surgeons or any diminution in the number of appointments held by these officers, considering that "the military assistant surgeon frequently makes a better civil surgeon than the civil assistant surgeon." In a concluding paragraph it is indicated that proposals may shortly be submitted by the Indian Government for an increase in the civil cadre of the Indian Medical Service in view of the growing medical needs of the country, for which the Viceroy's Council hope to show "that, looking to the work to be done, the services of Indian Medical officers [i.e., officers of the Indian Medical Service] are indispensable."

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

DURING the week the objects of this fund have been brought to the notice of many leading members of the medical profession, a fair number of subscriptions have been received, and the General Committee has been joined by, among others, Dr. A. H. F. Barbour (President of the Royal College of Physicians of Edinburgh), Professor Conway Dwyer (President of the Royal College of Surgeons in Ireland), Professor John Barlow (President of the Royal Faculty of Physicians and Surgeons, Glasgow), Sir Anderson Critchett, Dr. James Pearse, Sir William Osler, Mr. H. P. Symonds, Dr. W. Collier, Sir Isambard Owen, and Sir W. Arbuthnot Lane.

At the meeting of the Provisional Committee on Nov. 24th Dr. J. A. Macdonald, the chairman of the Council of the British Medical Association, said that in order to bring the appeal before the members of the profession generally it would be sent to the divisions and branches of the Association in the United Kingdom. In a circular letter issued by the medical secretary on Nov. 28th to the honorary secretaries of divisions and branches in the United Kingdom, it was stated that the officers of the Association fully realised that the claims on the profession at the present time are very great, but that they believed that this special appeal to doctors and pharmacists on behalf of the Belgian doctors and pharmacists was one to which nearly every member of the two professions would be glad to respond according to his means. It is understood that the Pharmaceutical Society of Great Britain is making a similar appeal through its local branches. It is known that already several divisions of the British Medical Association have arranged to call meetings and to appoint committees to raise subscriptions, and at a meeting of a Northamptonshire division on Dec. 1st it was decided to send a circular to all members of the profession in the area.

At the last meeting of the Liverpool Medical Institution the President, Dr. E. W. Hope, medical officer of health of the city, brought the Fund to the notice of the members, and the institution of a local contribution was warmly approved. Similar movements in other great centres would, of course, be very valuable.

Mr. W. J. Uglow Woolcock, the secretary and registrar of the Pharmaceutical Society, has consented to become honorary secretary to the committee conjointly with Dr. Squire Sprigge, and the hearty coöperation in the objects of the committee, expressed by the Pharmaceutical Society at a recent meeting of the council, will thus receive direct expression.

The following subscriptions to the fund have been received by Dr. H. A. Des Vœux, the treasurer, up to Tuesday evening last, in addition to subscriptions amounting to £1024 9s. 6*d.*, which were acknowledged last week. The list does not include any additional subscriptions received by the Irish committee:—

	£	*s.*	*d.*
Mr. R. Macfie Johnstone... ...	3	3	0
Sir Lauder Brunton, Bart. (second donation)	4	4	0
Mr. R. C. Fuller (second donation)	0	10	6
Miss M. A. Piliett, M.B.	1	1	0
Dr. John P. Uhthoff	5	0	0
Mr. Charles Umney	2	2	0
Mr. C. S. Ashton...	1	1	0
Mr. A. Stooke ...	1	1	0
Mr. J. G. Edwards	0	5	0
Mr. Arthur Toone	1	1	0
Mr. Cicero S. Clark (collected by his daughter)	2	6	4
Mr. W. Thornton...	1	1	0
Mr. G. Henry Pedler	5	0	0
Mrs. M. A. Rideal	5	5	0
Mr. C. J. Bond ...	2	2	0
Dr. R. Arderne Wilson	0	10	0
Dr. Robert Saundby	5	0	0
Dr. Claude Wilson.	2	2	0
Mrs. Thornton Levy	5	5	0
Mr. George Heaton	2	2	0
Mr. J. Y. W. MacAlister ...	5	0	0
Dr. W. A. Hollis...	1	1	0
Dr. H. M. Eyres ...	1	0	0
Dr. R. Tuxford ...	1	1	0
Messrs. G. B. Westmacott and Son..	1	1	0
Dr. Templeton Dunlop	1	1	0
Mr. J. Spring ...	1	1	0
Mr. H. J. Thomas..	5	0	0
Mr. Edmund Owen	5	5	0
Mrs. A. W. Hearn..	20	0	0
Colonel C. H. Joubert de la Ferté	5	0	0
"M.D."	3	3	0
"March Brown" ...	0	10	0
Mr. J. P. Ellerington (second donation	5	0	0
Dr. William Habgood	2	2	0
Dr. Hedden	1	1	0
Dr. J. G. Jack ...	1	0	0
Mr. W. H. Patmore Sheehy	5	0	0
Dr. Dundas Grant	5	0	0
Sir William Milligan	10	10	0
Sir William Osler, Bart.	10	10	0
Sir Richard Douglas Powell, Bart.	5	0	0
Dr. J. H. Garrett	2	2	0
Dr. J. Theodore Cash	3	3	0
Dr. Lovell Drage ...	5	0	0
Mr. Russell Coombe	1	1	0
Dr. Crawford Watson	3	3	0
Dr. Amand Routh	5	5	0
Mr. J. Copeland Poole	2	2	0
Royal College of Physicians of London	52	10	0
Mr. James Sherren	5	5	0
Mr. R. H. Dreaper	5	0	0
Dr. H. Bowen-Williams	0	10	6
Sir Anderson Critchett, Bart.	10	0	0
Dr. J. Auriol Armitage	5	5	0
Dr. G. A. Leon ...	1	1	0
Dr. F. M. Sandwith	5	5	0
Mr. W. Jessop ...	10	10	0
Mr. H. S. Pendlebury	3	3	0
Dr. Smallwood ...	2	2	0
Miss Cooke	1	1	0
Dr. Barrs	5	5	0
Mr. Arthur Thomson	3	3	0
Dr. N. Gerald Horner	1	1	0
Mr. W. O. McKane	1	1	0
Mr. Charters Symonds	20	0	0
Mr. O'Dowd	3	3	0
Dr. and Mrs. Edwin Rayner	5	5	0
Dr. Rattray	2	2	0
Mrs. Thornton Levy (second donation)	5	5	0
Dr. Farquhar Buzzard	3	3	0
Dr. W. Cecil Bosanquet ...	5	0	0
Mr. St. G. M. L. Homan	1	1	0
Dr. Jno. Brown ...	1	1	0
Dr. Mary S. Ackworth	2	0	0
Dr. H. H. Taylor	5	0	0
Dr. W. M. Palmer	1	1	0
Mr. Robert Harris	2	2	0
"M.D. Brux." ...	2	0	0
Dr. Charles Aldridge	1	1	0
Dr. Stanley E. Denyer, C.M.G.	1	1	0
Dr. Mary H. Carew Hunt	2	2	0
Mr. G. Dawson, R.N.	1	1	0
Mr. Maurice Mottram	1	1	0
Mr. H. Bellamy Gardner	3	3	0
Dr. A. R. G. Pocock	2	2	0
Dr. Henry Wilson	0	10	0
Dr. A. J. Rodocanachi	1	1	0
Dr. F. S Palmer ...	2	2	0
Dr. William Collier	5	5	0
Dr. Clement Dukes	5	0	0
"A Friend" (per Mr. J. Y. W. MacAlister) ...	2	2	0
Dr. and Mrs. Templeman ...	10	10	0
Sir Watson Cheyne	25	0	0
Sir W. Arbuthnot Lane, Bart. ...	20	0	0

Subscriptions should be sent to Dr. H. A. Des Vœux, 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, and crossed "Lloyd's Bank, Ltd." Subscriptions by members of the profession in Ireland may be sent to Dr. T. Percy Kirkpatrick, Registrar, Royal College of Physicians, or Dr. C. M. Benson, secretary to the Council of the Royal College of Surgeons of Ireland, at the Royal College of Physicians of Ireland, Kildare-street, Dublin.

In the first list of subscriptions Mr. J. P. Ellerington's name appears as a donor of £20. He has signified his intention of further subscribing £5 monthly for six months, and his first monthly donation is acknowledged to-day. In the same list Dr. G. Grey Turner's name is wrongly given as A. A. Turner.

The Appeal for Surgical Instruments.

The Master of the Society of Apothecaries acknowledges the receipt of surgical instruments kindly contributed by the following gentlemen since the publication of the last list:—

Dr. R. Arderne Wilson, Sausmarez-place, Guernsey; Dr. W. Horton Date, Ashley-road, Barnstaple; Dr. Pollock, Tiverton, Devon; Dr. W. Habgood, Health Department, Sutton, Surrey; Dr. Leishman, Slough; Mr. James Watson, Norwich; Dr. W. H. P. Sheehy, Montebello, Totteridge, Herts; Dr. J. B. Berry, Keighley; Dr. P. C. Maitland; Dr. J. E. Thomas, Bangor; Dr. G. A. Pirie, Airliebank, Dundee; Dr. H. A. Des Vœux, Buckingham Gate, S.W.; Dr. W. J. Harnett, Belvedere House, Barnet; Dr. Leon, Torquay; Dr. C. J. W. Dixon, Bridge-street, Hawick, N.B.; Dr. E. Smallwood, The Bays, Knight's Hill, West Norwood, S.E.; Dr. A. J. Ballantyne, Sandyford-place, Glasgow; C. W. J.

Health of the Post Office Staff.—In the report of the Postmaster-General for the year ended March 31st, 1914, it is stated that the health of the staff has again been satisfactory. The average sick-rate of the established staff was 7·9 days for men and 12·2 days for women, and of the unestablished staff 5·2 days for men and 6·0 days for women. The deaths recorded showed an annual death-rate of 3·1 per 1000 for men and 1·0 for women on the established staff. The proportion of deaths from tuberculous diseases to deaths from all causes in the Post Office was 16 per cent.; and the proportion of deaths and retirements from tuberculous diseases to deaths from all causes and retirements from ill-health was 16·1 per cent. "It appears," the report continues, "from the Registrar-General's annual return for 1911 that in the case of persons in the United Kingdom between the ages 15 and 65 the proportion of deaths from tubercular diseases to deaths from all causes was 21·0 per cent., and it therefore appears that the conditions of service in the Post Office are not, as is sometimes alleged, specially favourable to the development of tuberculosis. This is confirmed by the fact that in 87 per cent. of the cases of tuberculosis occurring during 1913 there was a history either of previous tubercular disease in the family or of previous illness predisposing to tuberculosis in the patient. Every facility is granted to Post Office servants suffering from tuberculosis to obtain sanatorium treatment where a reasonable prospect of recovery exists. It may be of interest to point out that of the cases occurring during 1913, which were completed before the end of the year, about 61 per cent. of those who received sanatorium treatment were able to resume duty as compared with 22 per cent. in the case of those who did not receive such treatment. An examination of the cases of neurasthenia occurring during 1913 showed that in the majority of cases the disease was attributable to physical causes or to domestic troubles, and that there is no foundation for the allegation that Post Office work has a prejudicial effect upon the nervous system of the staff generally."

A MONTHLY RECORD OF ATMOSPHERIC POLLUTION.

COMMITTEE FOR THE INVESTIGATION OF ATMOSPHERIC POLLUTION:

Summary of Reports for Month ending Sept. 30th, 1914.

1	2	3	4	5	6	7	8	9	10	11	12
Place.	Correspondent.	Rainfall in milli-metres.	Metric tons of deposit per square kilometre during month.								
			Insoluble matter.			Soluble matter.		Total solids.	Included in soluble matter.		
			Tar.	Carbon-aceous other than tar.	Ash.	Loss on ignition.	Ash.		Sulphate as (SO_4).	Chlorine (Cl).	Ammonia (NH_3).
ENGLAND—											
Birmingham, Central ...	Dr. J. Robertson, M.O.H.	22	0·10	2·80	8·50	1·30	3·40	16·10	2·10	0·20	0·10
Bolton	Dr. J. E. Gould, M.O.H.	126	0·08	2·02	7·54	7·07	7·57	24·28	4 05	1·88	0·09
Exeter	Mr. H. Lloyd Parry, Town Clerk.	65	0·04	1·62	3·20	0·78	1·98	7·63	0·74	0·39	0·00
Kingston-upon-Hull	Mr. A. R. Tankard, Public Analyst.	31	0·10	2·80	3·48	1·54	2·70	10·62	1·55	0·36	0·01
Liverpool	Dr. E. W. Hope, M.O.H.	81	0·16	3·02	7·30	5·49	3·88	19 86	2·93	1·49	0·21
London—											
Meteorological Office ...	Director, THE LANCET Laboratory.	21	0·05	1·97	1·92	1·28	1·94	7·16	1·21	0·45	0·05
Embankment Gardens ...	Mr. J. Ollis, Chief Officer, Public Control Department, L.C.C.	26	0·61	6·41	9·60	0·78	10·88	28·27	1·74	1·09	0·02
Finsbury Park...	,,	30·0	0·11	2·87	6·15	1·80	3·60	14·53	2·17	0·40	0·07
Ravenscourt Park	,,	22·0	0·01	0·55	1·47	0·26	1·10	3·39	0·43	0·30	0·03
Southwark Park	,,	19·0	0·05	3·27	6·73	0·32	3·26	13·63	1·67	0·37	0·05
Wandsworth Common ...	,,	10·0	0·02	0·54	1·31	1·25	2·76	5·88	1·50	0·41	0·01
Victoria Park	,,	30·0	0·05	0·99	2·29	2·49	6·61	12·44	3·60	0·73	0·04
Golden Lane	Dr. W. J. Howarth, M.O.H	22·0	0·02	2·50	3·64	1·27	2·44	9·87	1·69	0·37	0·09
Malvern	Mr. W. Osborne Thorpe, Engineer U.D.C.	22·0	0·01	0·22	0·58	0·21	0·51	1·55	0·18	0·12	0·00
Manchester—											
Cheadle	Mr. J. Warrington, Secretary, Air Pollution Advisory Board.	60·0	0·09	1·89	2·34	1·52	2·96	8·80	1·88	0·86	0·04
Davyhulme	,,	64·0	0·04	1·16	3·18	1·73	3·50	9·61	2·38	0·95	0·10
Fallowfield	,,	67·0	0·05	1·36	3·06	0·94	3·05	8·46	2·03	0·73	0·05
School of Technology ...	,,	73·0	0·10	3·34	6·63	1·63	4·92	16·62	3·39	1·09	0·09
University...	,,	67·0	0·13	2·46	5·66	1·18	2·98	12·41	1·51	0·90	0·08
Whitefield...	,,	76·0	0·03	1·60	4·69	1·72	4·99	13·03	2·75	1·07	0·05
Oldham	Dr. J. B. Wilkinson, M.O.H.	42·0	0·27	5·06	12·90	1·56	3·12	22·10	1·21	0·68	0·10
Newcastle-on-Tyne	Dr. H. Kerr, M.O.H.	47·0	0·07	2·97	5·03	0·76	1·51	10·33	1·30	0·22	0·07
Sheffield—											
Attercliffe Burial Ground	Prof. W. P. Wynne, The University.	30·0	0·69	3·16	10·21	1·42	5·51	20·99	2·50	1·12	0·07
Hillsborough Park	,,	39·0	0·10	0·26	2·71	0·76	2·62	6·45	1·43	0·81	0·07
Meersbrook Park	,,	31·0	0·42	0·45	2·60	0·87	3·03	7·37	1·35	0·56	0·04
Weston Park	,,	41·0	0·40	0·89	4·15	1·22	2·64	9·30	1·55	0·60	0·06
York...	Dr. E. M. Smith, M.O.H.	27·0	0·05	1·69	3·22	0·76	1·31	7·02	0·86	0·33	0·18
SCOTLAND—											
Greenock	Mr. James Devine, Sanitary Inspector.	58·0	0·06	1·50	3·61	0·69	1·50	7·37	0·74	0·29	0·05
Leith	Mr. Thomas Bishop, Sanitary Inspector.	13·0	0·03	0·91	1·79	0·20	0·80	3·74	0·49	0·09	0·03
Paisley	Mr. W. W. Kelso, Sanitary Inspector.	43·0	0·12	3·62	4·04	2·23	1·55	11·56	0·99	0·40	0·05

Col. 4 includes all matter insoluble in water but soluble in CS_2. Col. 5 includes all combustible matter insoluble in water and in CS_2 Col. 6 includes all earthy matter, fuel, ash, &c. One metric ton per sq. kilometre is equivalent to: *(a)* Approx. 9 lb. per acre; *(b)* 2·56 English tons per sq. mile; *(c)* one gramme per sq. metre; *(d)* 1/1000 millimetre of rainfall (see Col. 3).

The analytical work involved in the above return was undertaken respectively by J. F. Liverseege, F.I.C., Birmingham; Harry Hurst, B.Sc., F.I.C., Bolton; F. Southerden, B.Sc, F.I.C., Exeter; A. R. Tankard, F.I.C., Kingston-upon-Hull; W. H. Roberts, M.Sc., F.I.C., Liverpool; S. A. Vasey, F.I.C., Director, THE LANCET Laboratory (London Meteorological Office collections); J. H. Coste, F.I.C. (Embankment Gardens, Finsbury Park, Ravenscourt Park, Southwark Park, Wandsworth Common, Victoria Park collections), London; F. L. Teed, D.Sc., Golden-lane, London, E.C.; C. C. Duncan, F.I.C., Malvern; E. Knecht, Ph.D., M.Sc., Cheadle Davyhulme, Fallowfield, School of Technology, University, Whitefield (Manchester collections); J. J. Dunn, D.Sc., Newcastle-on-Tyne; Professor W. P. Wynne, Attercliffe Burial Ground, Hillsborough Park, Meersbrook Park, Weston Park (Sheffield collections); S. H. Davies, M.Sc., York; J. W. Biggart, F.I.C., Greenock; A. Scott Dodd, B.S., F.I.C., Leith and Paisley. The correspondents referred to in col. 2 are for the most part public health authorities.

Corrections.—In the June report from Leith the results were returned in error in grains instead of grammes, and the following corrections should be applied: Col. 4, for 0·70 read 0·05; Col. 5, for 19·20 read 1·24; Col. 6, for 35·87 read 2·32; Col. 7, for 21·82 read 1·41; Col. 8, for 7·27 read 0·47; Col. 9, for 84 92 read 5·50; Col. 10, for 8·26 read 0·54; Col. 11, for 5·08 read 0·33; Col. 12, for 1·39 read 0·09.

In the June and July returns the figures for ammonia recorded for the Meteorological Office collections are based upon total nitrogen found. In subsequent returns they refer to free ammonia only.

In the May returns the figure given for ammonia at Greenock should read 0·08 not 0·82 as printed.

UNIVERSITY OF LONDON.—At the last meeting of the Senate, with the acting Vice-Chancellor Sir Alfred Pearce Gould in the chair, it was resolved to express to the Vice-Chancellor profound sympathy on the death of his son, Captain G. W. Herringham, killed in action. Among various resolutions which were passed in respect of the war was one to the effect that during the continuance of the war only the Second Examination for medical degrees, Part I., should be held in December as well as in March and July. The resignation by Dr. David Waterston of the professorship of anatomy in King's College was reported. Dr. George C. Low was recognised as a teacher of tropical medicine at the London School of Tropical Medicine, and Mr. R. Foster Moore as a teacher of ophthalmology at the Royal London Ophthalmic Hospital. The Vice-Chancellor (and, during his absence at the seat of war, the acting Vice-Chancellor) was elected chairman of the site and accommodation committee. Dr. M. S. Pembrey was appointed an internal examiner in physiology for medical degrees. Dr. Sidney Phillips and Professor Albert Carless were appointed to act as examiners in the December examinations for the M.D. and M.S. degrees, in the absence of Dr. H. D. Rolleston and Mr. F. F. Burghard respectively, who are absent on military duty. Dr. S. L. Box was nominated for reappointment as a member of the Ealing Education Committee.—At a meeting of the University of London Lodge of Freemasons held on Nov. 12th Dr. Sydney Russell Wells was installed as the thirty-first Master of the lodge.—The first annual general meeting of the members of the University of London Club will be held at the Club House, 21, Gower-street, W.C., on Wednesday next, Dec. 16th, at 8.30 P.M.

THE WAR REFUGEES' CAMP AT EARL'S COURT.

IN THE LANCET of Sept. 26th and Oct. 3rd our Special Sanitary Commissioner described the early arrangements which were made by the Metropolitan Asylums Board on behalf of the Local Government Board for dealing with the large number of Belgian war refugees reaching England at that time from Antwerp. His experiences at Tilbury and the Alexandra Palace showed clearly that the very difficult problem of receiving and disposing of our poorer guests of war had even then been taken in hand with great thoroughness. It will be remembered that the duty of providing reception hostels for the temporary housing of refugees, as well as the registration of refugees, was entrusted by the Local Government Board early in September to the Metropolitan Asylums Board, who readily placed at the disposal of the Government their machinery for dealing with large numbers of persons in an orderly fashion. In the 12 weeks which have since elapsed over 40,000 refugees have been temporarily cared for in this manner. Our Commissioner described the first beginnings of the scheme and carried the story up to what may be called, in military language, the occupation of the Alexandra Palace.

From this point until after the fall of Ostend on Oct. 15th a continuous torrent of war refugees passed through the Palace. The average daily number of admissions was about 500, while on Oct. 12th some 1200 persons were received between 1.30 and 3.30 A.M., and again when the refugee ship *Admiral Ganteaume* was torpedoed in the Channel on Oct. 26th more than 1900 persons were brought to London and admitted at the Alexandra Palace after midnight. The growing influx of destitute persons from Belgium soon made it apparent that further accommodation would be needed. Two more refugee hostels at Streatham and Edmonton were opened, and on Oct. 13th negotiations were concluded for the use of the Earl's Court Exhibition premises. The "Sunny Spain" Exhibition was closed, the buildings were cleared, and staff and equipment were collected with all speed, with the result that on the evening of the day when possession was given 1400 refugees were received between 9 and 11 P.M., and were fed and housed. The adaptation of the buildings for winter use under the name of the War Refugees' Camp has since proceeded, and there is now accommodation for 3000 persons. Using this camp as a clearing-house, it has been found possible to deal with parties arriving at all hours of the day and night to the number of 2000 persons a week. Few refugees stay at Earl's Court more than six or seven days before being drafted in small groups into various parts of the country through the organisation provided by the War Refugees Committee. In all, more than 11,000 beds were provided by the Metropolitan Asylums Board within a few weeks, and there is still room for some expansion in an emergency; but up to the present the largest number of persons dealt with in one day has been 9170. The forthcoming arrival of 25,000 more Belgian refugees from Holland will, however, increase the demand for beds.

On Sunday last a representative of THE LANCET was given an opportunity of inspecting the new Earl's Court, which has most ingeniously been transformed into an immense caravanserai. The large exhibition buildings have been broken up by screening into small dormitories. In the vast amphitheatre of the Empress Hall 1000 beds are ranged on the lofty galleries, rising from the floor, tier upon tier, to a height of 50 feet, and presenting a remarkable sight, while the subdivision of the western arcade into rooms and cubicles offers cosier accommodation for the women and children. Each refugee is provided with a bedstead, mattress, pillow, two sheets, and four blankets, and nearly 7000 of these outfits have been purchased in addition to utilising large stocks already in the Board's possession. The floor space of the Empress Theatre provides dining accommodation at clean white covered tables for over 3000 at one sitting. With the advent of winter the heating of the buildings has been undertaken, the Empress Theatre by a hot-air system and the rest of the buildings by gas radiators.

The arrangements at the War Refugees Camp, where for the present all refugees are being received, may be taken as typical. The camp is reached by special motor-buses detailed for the transport of the refugees from the London termini at which they arrive, or by special train to the West London Extension Station when particularly large numbers come. On entering the camp the baggage, including bundles of all kinds and sizes, is stored in the Princes Hall, the visitors are given a liberal supply of hot coffee and bread and butter, or a meat meal when required, and are put to bed. Next morning the refugees present themselves at the registration office, where name, age, sex, residence in Belgium, and occupation are recorded, and these particulars are subsequently forwarded to the Registrar-General at Somerset House for inclusion in a great central register of refugees. For this work, as well as for general service as interpreters, a staff of trilingual Belgians has been retained.

A large clothing depôt, well stocked by generous gifts, is served by voluntary workers, and from these the guests are supplied with enough to reach their several destinations in comfort. The local public baths, again, have been available for the refugees, and hundreds have proceeded there daily, but with the advent of colder weather a large bathroom is being fitted up in the exhibition. The sanitary accommodation generally is quite adequate for the needs of the camp; indeed, to the Flemish peasant the water-closets must seem more than palatial. The whole place is kept scrupulously clean and tidy. A large crèche equipped with cots and cradles affords opportunities for mothers to leave their babies in the care of trained nurses, while the Welcome Club has been adapted for use as a hospital.

The permanent staff of the Metropolitan Asylums Board has been largely drawn on for the administration of these great hostels. At the War Refugees Camp, in addition to Mr. G. A. Powell, the officer in charge, there are three resident medical men, a matron, and a staff of trained nurses. The extent of this work and the labours of those associated in the administration and working of these refuges are little known, and have received but passing attention in the stress and anxieties of the military campaign, but they will prove to be not the least important part played by this country in the European crisis, and will result in the building up of lasting ties of friendship with the allied nations and especially with our gallant Belgian friends. A gratifying feature of the work is the constant receipt by the officer in charge of touching letters of thanks for the welcome they have received in the camp and for the generous hospitality of the English nation from refugees of every social class, while equally pleasing to the officials engaged in the work have been the visits and appreciation of distinguished Belgians, including their Queen.

THE SERVICES.

ROYAL NAVAL VOLUNTEER RESERVE.

THE following appointments have been notified:—Surgeon: A. G. L. Reade to the *Pembroke*, for R.N. Barracks. Surgeon Probationers: T. R. F. Kerby, J. M. Harrison, S. E. G. Elliott, T. J. Lane, and G. S. Barnett, all to the *St. George*, additional, for the *Albatross*, *Earnest*, *Panther*, *Quail*, and *Seal* respectively; and G. E. Mullins to the *Leander*, additional, for the *Orwell*.

ARMY MEDICAL SERVICE.

Sir Berkeley George Andrew Moynihan to be temporary Colonel (dated Nov. 28th).

ROYAL ARMY MEDICAL CORPS.

John Hall Edwards to be temporary Major (dated Dec. 1st). Guy Neville Stephen is granted temporarily the honorary rank of Major (dated Dec. 8th). William Rees Thomas is granted temporarily the honorary rank of Captain (dated Dec. 9th). Hugh Leonard Burton is granted temporarily the honorary rank of Lieutenant (dated Dec. 9th).

The undermentioned to be temporary Lieutenants:—Dated Nov. 21st: Charles Henry Fennell, George Jackson Wilson, Albert Ernest Salkeld, and Horace Simeon Berry. Dated Nov. 23rd: George Louis Atkinson, Lionel Cecil Ferguson, Alexander George Higgins, Arthur Gilbert Michelsen Middleton, and Charles Joseph Singer. Dated Nov. 24th: Donald Clark, Henry William Teague, James Matheson, Edward Harold Hertslet Granger, and Fred Alfred Risdon Hacker.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.

Royal Army Medical Corps.

To be Lieutenants on probation:—Leo Basil Clyde Marksman, Thomas Sheedy, Alexander Guthrie Semple Wallace, William Muir Dickson, James Learmont McBean, Frank Montague Barnes, Douglas Noel Macleod, Thomas Gordon Fleming, James Swan, and Richard Patrick Starkie.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank:—Alan Cecil Perry, Harry Evans, Basil William Brown, Arthur Patrick Kennedy, Claud Aldous Slaughter, Stanley Wall Hoyland, Joseph Harold Baird, Thomas Ottiwell Graham, Owen Hairsine, Raymond John Clansen, George Albert Cole, Richard O'Kelly, Clive Alan Whittingham, Albert Frederick Leopold Shields, Frederick McKibbin, Thomas Macnaughton Davie, Campbell McNeill Cormack, John Gray Ronaldson, Hubert Charles George Pedler, Robert Lister Horton, John Alston, Charles Robertson McIntosh, John Cameron, James Couper Brash, Francis George Macnaughton, William McMeekin Chesney, William Walker, David Murdoch Marr, John McCallum Orme, John Alexander O'Driscoll, Ivan Millar Pirrie, Edgar Stanley Rowbotham, John Forbes William Sandison, Idris David Evans, Patrick Walsh, Thomas William Clarke, John Cullenan, Francis Dighton Annesley, Ian Dishart Suttie, Henry Cuthbert Bazett, George Perkins, Cyril James Anthony Griffin, Frank Cook, Francis Henry Guppy, Robert Ellis, Francis Gerald Augustus Smyth, Clifford William Sparks, Harry Edmund Creswell, Richard Amyas Preston, Arthur Bennet Preston, Albert George William Compton, Charles Hamblin Thomas, William Campbell Mackie, Charles Dudley Maybury Buckley, Frank Percy Freeman, Henry Searle Baker, Frank Crosbie, Francis Arthur Belam, Austin Smith, Ernest Andrews Dyson, Hamilton Barrett Goulding, William Ernest Tyndall, Walter Vincent Tothill, Harry Nield, Cyril Armstrong, Norman Lockhart Joynt, Hugh Spear Pemberton, Peter Francis Ward, William John Adie, William Somerset Birch, Alexander James Ewing, Harold Emerson Rose, Richard Naunton Ouseley Moynam, Morgan Joseph Bernard Francis Burke-Kennedy, John Victor Livingstone Grant, George Guthrie Marshall, Leonard Foster Browne, Cuthbert Hastings Attenborough, Harold James Stons Morton, Reginald Heber Leigh, George Martin Chapman, James Bethune Scott, John Prosser Davies, David William John, Joseph Bannister Williamson, John Clark Pyper, Geoffrey Ward Wood, Timothy Francis Hegarty, Bernard Murphy, William Henry Wood, Henry Alphonsus Harbison, Cyril Popham, Robert Hay, Claude Joscelyn Delabere May, Charles Frederick Hacker, James Kenworthy Johnston Haworth, Laurence Heber Warneford Iredale, Cedric Overton Shackleton, Thomas Copeland Storey, George Henry Chavasse Mold, John Newton McIntosh, John Howard Owen, Alexander Boyd Foot, James Lanigan, Jeremiah John Magner, Gerald Conroy Dixon, Charles Frank Burton, Lionel Arthur Lewis, John Prince Stallard, Patrick Joseph Corcoran, and Walter Armstrong Elliott.

The undermentioned to be Lieutenants on probation:—James Bryan Fotheringham, Cecil Spurling Staddon, Robert Ievers Sullivan, Johan Frederick van der Westhuyzen, Andrew Russell Ross, Claude Henry Fischel, Frederick Martin Lipscomb, Harry Prust Rudolf, Robert William Skinner Murray, William Herron Elliott, Gifford Traill van der Vyver, and Allan Beresford Hawkins.

TERRITORIAL FORCE.

Sussex Yeomanry: Surgeon-Lieutenant John R. Steinhaeuser is seconded.

Army Medical Services.

Lieutenant-Colonel Walter C. Beevor, C.M.G., Deputy Assistant Director of Medical Services, to be Assistant Director of Medical Services to a Territorial Division, with the temporary rank of Colonel.

Colonel Damer Harrisson, Retired List, Territorial Force, to be an Assistant Director of Medical Services to a Territorial Division, with the rank of Colonel.

Royal Army Medical Corps.

North Midland Mounted Brigade Field Ambulance: The undermentioned to be Lieutenants: Fred Hollway Davies and Samuel Acheson (late Cadet Lance-Corporal, Belfast University Contingent, Senior Division, Officers Training Corps).

2nd Highland Field Ambulance: Captain David Rorie to be Major. Captain Charles Cameron to be Major (temporary). Robert Tennant Bruce to be Lieutenant.

3rd Highland Field Ambulance: George McConnell to be Lieutenant.

1st North Midland Field Ambulance: Alexander Fordyce to be Lieutenant.

2nd North Midland Field Ambulance: The undermentioned to be Lieutenants: Henry Price Malcolm and Robert John McConnell.

1st West Riding Field Ambulance: Captain Walter Lister to be Major (temporary). John H. Blackburn and John Pinder to be Lieutenants.

3rd West Riding Field Ambulance: William Wilfred James Lawson to be Lieutenant.

1st Eastern General Hospital: Michael George Foster (late Surgeon-Captain, 2nd Volunteer Battalion, Royal Fusiliers (City of London Regiment)), to be Captain. Lieutenant John Herbert Owens, from Attached to other than Medical Units, to be Lieutenant.

1st Scottish General Hospital: Officers whose services will be available on mobilisation: Harold Edgar Smith to be Captain. Captain James Smart to be Major.

1st Western General Hospital: Robert William MacKenna to be Captain.

1st South Midland Mounted Brigade Field Ambulance: To be Lieutenants: James Howard Wilkinson and George Christie Soutter.

South-Eastern Mounted Brigade Field Ambulance: Captain James Hamilton, from Attached to Units other than Medical Units, to be Major.

1st South-Western Mounted Brigade Field Ambulance: Philip Woodgate Mason to be Lieutenant.

4th London Field Ambulance: Lieutenant Alfred M. Hughes, from the 6th London Field Ambulance, to be Lieutenant.

3rd Northern General Hospital: Major George H. Pooley, from the Permanent Personnel, to be Major, whose services are available on mobilisation. Captain Arthur G. Yates, from the list of officers whose services are available on mobilisation, to be Registrar, vice Major Pooley, who resigns that appointment.

3rd East Lancashire Field Ambulance: Major William R. Matthews to be Lieutenant-Colonel (temporary).

1st West Lancashire Field Ambulance: Lieutenant-Colonel David Smart, from Sanitary Service, to be Lieutenant-Colonel (temporary).

2nd West Lancashire Field Ambulance: Brigade-Surgeon-Lieutenant-Colonel William J. Fleetwood, Retired List, Territorial Force, to be Lieutenant-Colonel (temporary).

3rd West Lancashire Field Ambulance: Major and Honorary Lieutenant-Colonel Ernest W. Barnes, from Attached to Units other than Medical Units, to be Lieutenant-Colonel (temporary). Lieutenant Mitchell I. Dick to be Captain.

1st Welsh Field Ambulance: Vaughan Bateson to be Lieutenant.

2nd Western General Hospital: The undermentioned to be Captains: Herbert Lund, Robert Ollerenshaw (late Surgeon-Captain, 4th Volunteer Battalion, The Cheshire Regiment).

1st London (City of London) Sanitary Company: Major Lewis T. F. Bryett is seconded.

1st London (City of London) Field Ambulance: James Patrick Nunan Casey to be Lieutenant.

1st East Anglian Field Ambulance: Captain Francis Ward to be Major (temporary).

3rd Home Counties Field Ambulance: Charles Edward Milnes Hey to be Lieutenant.

1st Lowland Field Ambulance: Captain William Bryce to be Major.

Northumbrian Clearing Hospital: To be Lieutenants: Arthur Sutcliffe and Robert Rutherford Lishman.

6th London Field Ambulance: The undermentioned Captains to be Majors (temporary): Henry King Dawson and John Wilfred Bird.

2nd London Clearing Hospital: Captain Frederick W. Higgs to be Major.

5th (Cinque Ports) Battalion, The Royal Sussex Regiment: Surgeon-Lieutenant Peter M. Waugh to be Surgeon-Captain.

Supernumerary for Service with Officers Training Corps.—John P. Kinloch to be Lieutenant, and John E. MacIlwaine to be Lieutenant for service with the medical unit, Belfast University Contingent, Senior Division Training Corps.

Attached to Units other than Medical Units.—Russell Eliott Wood (late Surgeon Lieutenant-Colonel, Lanarkshire Yeomanry) to be Lieutenant-Colonel. To be Majors: Captain Horace C. Colman, Captain James C. Taylor, Captain Thomas W. Banks, and Captain William J. Mackinnon. To be Captains: Lieutenant James A. Simpson, Surgeon-Captain George P. Chappel (from the 7th Battalion, The Duke of Cambridge's Own (Middlesex Regiment)), Lieutenant Robert H. Shaw, Captain Alexander Graham (from the 3rd East Anglian Field Ambulance, Royal Army Medical Corps), Lieutenant George B. Brand, Lieutenant Percy R. Bolus, Lieutenant Robert Paterson, and Lieutenant J. O. Summerhayes. To be Lieutenants: George Herbert Dominy, William Henry Hender Bennett (late Surgeon-Lieutenant, 1st Volunteer Battalion The King's Own (Yorkshire Light Infantry)), William Robertson, John Kendall Syms, Arthur Samuel Walker, George Edward Gray Mackay, Daniel Durward Brown, Huntly Nevins Pelly, William Layard Griffiths, David Edward Evans, and Thomas Pearson Caverhill.

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

The undermentioned Lieutenant-Colonels, from the 2nd

Northern General Hospital, Royal Army Medical Corps, to be Lieutenant-Colonels: Thomas Churton and Thomas P. Teale.

Surgeon-Captain Reginald C. Gayer, from the Surrey (Queen Mary's Regiment) Yeomanry, to be Captain.

We are asked to state that the marks sent to us for publication against Surgeon F. C. Hunot's name in the list of successful candidates for the Acting Surgeons' Examination (*vide* THE LANCET, Nov. 28th, p. 1267) are those obtained at the Entrance Examination for the Naval Medical Service, when he obtained first place, he having been prevented by illness from attending the Greenwich course and from competing at the subsequent examinations.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 7703 births and 5329 deaths were registered during the week ended Saturday, Dec. 5th. The annual rate of mortality in these towns, which had been 13·0, 14·3, and 16·6 per 1000 in the three preceding weeks, declined in the week under notice to 15·3 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 14·1, against 14·4 per 1000 in the metropolis. Among the several towns the death-rate last week ranged from 4·9 in Acton, 7·5 in Gillingham, 8·4 in Eastbourne, 8·5 in Enfield, and 8·6 in Ilford and in Bournemouth to 20·0 in Bath and in Newcastle-on-Tyne, 20·3 in West Bromwich, 21·1 in Stockton-on-Tees, 21·6 in Plymouth, and 24·7 in Gloucester and in Rotherham.

The 5329 deaths from all causes were 431 fewer than the number in the previous week, and included 439 which were referred to the principal epidemic diseases, against 440 and 448 in the two preceding weeks. Of these 439 deaths, 155 resulted from measles, 99 from diphtheria, 94 from infantile diarrhœal diseases, 48 from whooping-cough, 30 from scarlet fever, and 13 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3 per 1000, and coincided with that recorded in each of the three preceding weeks. The deaths attributed to measles, which had been 167, 148, and 174 in the three preceding weeks, fell to 155 last week, and caused the highest annual death-rates of 1·4 in Smethwick, in Bolton, and in Huddersfield, 1·7 in Wigan and in Gateshead, 2·0 in Wakefield, 2·2 in Edmonton, 2·3 in Northampton, 2·4 in Rotherham, 2·7 in Grimsby, and 4·2 in Newcastle-on-Tyne. The deaths referred to diphtheria, which had been 58, 74, and 77 in the three preceding weeks, further rose to 99 last week; this was the highest number of deaths recorded from this cause in any week of the current year, and included 30 in London, 10 in Birmingham, 6 in Liverpool, 4 in Hull, and 3 each in Willesden, West Ham, Great Yarmouth, and Sheffield. The fatal cases of diarrhœa and enteritis (among infants under two years), which had been 131, 138, and 102 in the three preceding weeks, further fell to 94 last week, of which 30 occurred in London, 8 in Liverpool, and 4 each in Manchester and Newcastle-on-Tyne. The deaths attributed to whooping-cough, which had been 39, 35, and 42 in the three preceding weeks, further rose to 48 last week, and included 9 in London, 5 in Rhondda, and 3 in Bristol. The deaths referred to scarlet fever, which had been 42, 28, and 42 in the three preceding weeks, fell to 30 last week, of which 10 were registered in London, 4 in Manchester, and 2 each in Birmingham, Liverpool, Oldham, Gateshead, and Newcastle-on-Tyne. The fatal cases of enteric fever, which had been 17, 17, and 11 in the three preceding weeks, were 13 last week, and included 2 each in Wigan and Newport (Mon.).

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 3071 to 5005 in the 15 preceding weeks, had declined to 4980 on Saturday last; 537 new cases were admitted during the week, against 751, 627, and 623 in the three preceding weeks. These hospitals also contained on Saturday last 1671 cases of diphtheria, 61 of enteric fever, 49 of whooping-cough, and 47 of measles, but not one of small-pox. The 1325 deaths from all causes in London were 99 fewer than the number in the previous week, and corresponded to an annual death-rate of 15·3 per 1000. The deaths referred to diseases of the respiratory system, which had been 181, 203, and 324 in the three preceding weeks, fell to 312 in the week under notice, but were 51 above the number recorded in the corresponding week of last year.

Of the 5329 deaths from all causes in the 97 towns, 198 resulted from different forms of violence and 411 were the subject of coroners' inquests, while 1489 occurred in public institutions. The causes of 44, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Leeds, Bristol, Bradford, Hull, and in 61 other smaller towns. Of the 44 uncertified causes of death, 13 were registered in Birmingham, 9 in Liverpool, 3 each in Portsmouth, Leicester, and South Shields, and 2 in Barrow-in-Furness.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1043 births and 803 deaths were registered during the week ended Saturday, Dec. 5th. The annual rate of mortality in these towns, which had been 15·2, 16·6, and 18·4 per 1000 in the three preceding weeks, slightly fell to 18·3 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 16·1, against 14·1 per 1000 in the 97 large English towns. Among the several towns the death-rate ranged from 9·5 in Hamilton, 12·3 in Perth, and 12·5 in Falkirk, to 22·9 in Leith, 23·6 in Ayr, and 25·0 in Kilmarnock.

The 803 deaths from all causes were 5 fewer than the number in the previous week, and included 79 which were referred to the principal epidemic diseases, against numbers increasing from 50 to 82 in the three preceding weeks. Of these 79 deaths, 30 resulted from whooping-cough, 20 from diphtheria, 15 from scarlet fever, 10 from infantile diarrhœal diseases, 2 from measles, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·8, against 1·3 per 1000 in the 97 large English towns. The deaths attributed to whooping-cough, which had been 7, 13, and 25 in the three preceding weeks, further rose to 30 last week, of which 25 were registered in Glasgow and 3 in Dundee. The deaths referred to diphtheria, which had been 7, 17, and 13 in the three preceding weeks, rose to 20 last week, and included 7 in Glasgow, 5 in Aberdeen, 3 in Edinburgh, and 2 in Kirkcaldy. The fatal cases of scarlet fever, which had been 8, 16, and 25 in the three preceding weeks, fell to 15 last week; 6 deaths occurred in Glasgow, 4 in Aberdeen, and 2 in Leith. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had declined from 31 to 10 in the six preceding weeks, were again 10 last week, of which 4 were recorded in Glasgow, 3 in Dundee, and 2 in Aberdeen. The 2 deaths referred to measles occurred in Glasgow, and the fatal cases of enteric fever in Glasgow and Coatbridge.

The deaths referred to diseases of the respiratory system, which had steadily increased from 62 to 163 in the 11 preceding weeks, were again 163 in the week under notice; 34 deaths resulted from different forms of violence, against 26 and 39 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 549 births and 464 deaths were registered during the week ended Saturday, Dec. 5th. The annual rate of mortality in these towns, which had been 17·7, 18·3, and 19·4 per 1000 in the three preceding weeks, further rose to 20·1 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 17·4, against corresponding rates of 14·1 and 16·1 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 24·5 in Dublin (against 15·3 in London and 19·1 in Glasgow), 21·2 in Belfast, 14·3 in Cork, 10·1 in Londonderry, 25·7 in Limerick, and 13·3 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 13·5 per 1000.

The 464 deaths from all causes were 15 in excess of the number in the previous week, and included 42 which were referred to the principal epidemic diseases, against 44 and 40 in the two preceding weeks. Of these 42 deaths, 12 resulted from infantile diarrhœal diseases, 8 from measles, 8 from scarlet fever, 6 from diphtheria, 4 from enteric fever, and 4 from whooping-cough, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·8, against corresponding rates of 1·3 and 1·8 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 10, 13, and 10 in the three preceding weeks, rose to 12 last week, of which 5 were recorded in Belfast and 4 in Dublin. The deaths referred to measles, which had been 9, 10, and 14 in the three preceding weeks, fell to 8 last week, and were all registered in Belfast. The fatal cases of scarlet fever, which had been 14, 12, and 10 in the three preceding weeks, further declined to 8 last week, and included 3 in

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING NOVEMBER, 1914.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhoea and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON.	**4,516,612**	—	**2754**	**914**	**1**	**59**	**1**	**47**	**527**	**2**	**10**	**4315**	**12·5**	—	**158**	**38**	**80**	**34**	**12**	**147**	**469**	**1·4**	**5045**	**14·6**
West Districts.																								
Paddington	142,055	—	114	30	—	—	1	—	18	—	—	163	15·0	—	—	1	1	2	1	11	16	1·5	152	13·8
Kensington	170,817	—	99	28	—	—	—	1	15	1	—	144	11·0	—	2	—	2	—	1	3	8	0·6	177	13·4
Hammersmith	124,750	—	137	36	—	2	—	1	5	—	—	181	18·9	—	11	—	3	4	—	6	24	2·5	156	16·1
Fulham	158,849	—	121	34	—	2	—	4	16	—	—	177	14·5	—	7	2	3	1	—	4	17	1·4	142	12·1
Chelsea	63,791	—	19	6	1	3	—	—	1	—	—	30	6·1	—	1	2	1	—	—	2	6	1·2	70	13·6
City of Westminster	152,346	—	92	15	—	11	—	—	13	—	—	131	11·2	—	—	4	1	—	—	7	12	1·0	175	15·8
North Districts.																								
St. Marylebone	112,892	—	40	40	—	3	—	—	8	—	—	91	10·5	—	—	1	3	1	1	1	7	0·8	117	13 8
Hampstead	86,731	—	24	18	—	2	—	—	3	—	2	49	7·4	—	—	2	3	—	—	—	5	0·8	83	13·2
St. Pancras	212,497	—	128	48	—	4	—	1	17	—	—	193	12·1	—	9	2	3	1	—	8	23	1·4	267	16·4
Islington	324,764	—	186	62	—	2	—	—	33	—	3	286	11·5	—	10	4	7	1	1	10	33	1·3	368	14·4
Stoke Newington	50,454	—	33	7	—	—	—	1	10	—	—	51	13·2	—	—	—	—	—	—	1	1	0·3	56	13·8
Hackney	223,724	—	88	47	—	3	—	2	38	—	—	178	10·4	—	30	—	2	1	1	8	42	2·4	245	14·4
Central Districts.																								
Holborn	45,861	—	8	4	—	1	—	—	—	—	—	13	3·7	—	1	—	—	1	1	—	3	0·9	61	17·4
Finsbury	83,212	—	55	13	—	—	—	4	15	—	—	87	13·6	—	1	—	—	2	—	10	13	2·0	129	20·0
City of London	17,129	—	4	7	—	—	—	—	2	—	—	13	9·9	—	—	—	1	—	1	—	2	1·5	15	11·9
East Districts.																								
Shoreditch	108,869	—	66	13	—	—	—	1	17	—	—	97	11·6	—	8	1	—	2	—	6	17	2·0	153	18·9
Bethnal Green	127,662	—	77	31	—	—	—	1	24	—	1	134	13·7	—	5	—	4	3	—	9	21	2·1	156	16·5
Stepney	273,265	—	310	116	—	6	—	6	40	—	1	479	22·8	—	20	1	8	—	—	6	35	1·7	312	15·5
Poplar	160,222	—	60	35	—	4	—	6	25	—	1	131	10·7	—	3	—	6	—	—	6	15	1·2	192	15·4
South Districts.																								
Southwark	186,941	—	117	26	—	—	—	4	32	—	—	179	12·5	—	15	1	5	2	—	4	27	1·9	247	17·3
Bermondsey	124,213	—	34	15	—	1	—	1	25	—	—	76	8·0	—	6	1	3	1	—	6	17	1·8	166	17·4
Lambeth	296,724	—	152	49	—	4	—	—	38	—	—	243	10·7	—	8	3	4	5	2	6	28	1·2	346	14·9
Battersea	167,338	—	124	24	—	2	—	2	19	—	—	171	13·3	—	8	4	1	—	—	9	22	1·7	173	13·6
Wandsworth	338,998	—	153	54	—	4	—	5	19	1	1	237	9·1	—	6	4	6	3	—	8	27	1·0	294	11·4
Camberwell	262,020	—	171	31	—	1	—	3	33	—	1	240	11·9	—	4	—	4	1	—	6	15	0·7	290	14·2
Deptford	109,182	—	88	30	—	—	—	—	15	—	—	133	15·9	—	—	2	6	1	—	7	16	1·9	139	16·4
Greenwich	96,037	—	68	32	—	2	—	1	10	—	—	113	15·3	—	—	1	1	1	2	—	5	0·7	111	14·9
Lewisham	172,433	—	117	28	—	2	—	1	18	—	—	166	12·5	—	1	—	1	—	1	2	5	0·4	140	10·4
Woolwich	122,836	—	68	34	—	—	—	2	18	—	—	122	12·9	—	2	2	1	1	—	1	7	0·7	113	12·3
Port of London	—	—	1	1	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex and age constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

Belfast. The deaths attributed to diphtheria, which had been 3, 4, and 2 in the three preceding weeks, rose to 6 last week, of which 3 were recorded in Dublin. The 4 deaths referred to enteric fever were slightly in excess of the average in the earlier weeks of the quarter, and were all registered in Dublin. Of the 4 fatal cases of whooping-cough, which were equal to the average in recent weeks, 2 occurred in Belfast and 2 in Cork.

The deaths referred to diseases of the respiratory system, which had been 67, 85, and 100 in the three preceding weeks, fell to 90 in the week under notice. Of the 464 deaths from all causes, 150, or 32 per cent., occurred in public institutions, and 2 resulted from various forms of violence. The causes of 12, or 2·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion did not exceed 0·8 per cent.

VITAL STATISTICS OF LONDON DURING NOVEMBER, 1914.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 12·5 per 1000 of the population, estimated at 4,516,612 persons in the middle of the year; in the three preceding months the rates were 7·5, 11·6, and 14·0 per 1000 respectively. The lowest rates last month were recorded in Chelsea. Hampstead, Holborn, Bermondsey, and Wandsworth; and the highest rates in Paddington, Hammersmith, Stepney, Deptford, and Greenwich. The prevalence of scarlet fever showed some decrease from the very high point reached in the preceding month; the greatest proportional prevalence was recorded last month in Paddington, Hammersmith, Fulham, Stepney, Battersea, Deptford, Greenwich, and Lewisham. The Metropolitan Asylums Hospitals contained 4956 scarlet fever patients at the end of last month, against 3199, 4157, and 4561 at the end of the three preceding months; the weekly admissions averaged 661, against 414, 598, and 618 in the three preceding months. Diphtheria also was slightly less prevalent in November than it had been in the previous month; the greatest proportional prevalence of this disease was recorded in Hammersmith, St. Marylebone, the City of London, Bethnal Green, Stepney, Deptford, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 1630 diphtheria patients at the end of last month, against 1030, 1296, and 1489 at the end of the three preceding months; the weekly admissions averaged 247, against 128, 188, and 213 in the three preceding months. Enteric fever was rather less prevalent than in any of the three preceding months; the metropolitan boroughs in which the greatest proportional prevalence of this disease was recorded last month were Chelsea, the City of Westminster, St. Marylebone, Hampstead, Stepney, Poplar, and Greenwich. There were 63 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 39, 57, and 65 at the end of the three preceding months; the weekly admissions averaged 8, against 11 in each of the two preceding months. Erysipelas was proportionally most prevalent in Stoke Newington, Hackney, Finsbury, Shoreditch, Bethnal Green, Poplar, Southwark, and Bermondsey. The 47 cases of puerperal fever notified during the month included 6 in Stepney, 6 in Poplar, 5 in Wandsworth, and 4 each in Fulham. Finsbury, and Southwark. The 2 cases of cerebro-spinal meningitis belonged respectively to Kensington and Wandsworth; and of the 10 cases of poliomyelitis 3 belonged to Islington, 2 to Hampstead, and 1 each to Bethnal Green, Stepney, Poplar, Wandsworth, and Camberwell.

The mortality statistics relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations of the several boroughs. During the four weeks ending Nov. 28th the deaths of 5045 London residents were registered, equal to an annual rate of 14·6 per 1000; in the three preceding months the rates had been 12·6, 15·5, and 14·1 per 1000 respectively. The death-rates last month ranged from 10·4 in Lewisham, 11·4 in Wandsworth, 11·9 in the City of London, 12·1 in Fulham, and 12·3 in Woolwich, to 17·3 in Southwark, 17·4 in Holborn and in Bermondsey, 18·9 in Shoreditch, and 20·0 in Finsbury. The 5045 deaths from all causes included 158 from measles, 38 from scarlet fever, 80 from diphtheria, 34 from whooping-cough, 12 from enteric fever, and 147 from diarrhœa and enteritis among children under 2 years of age The lowest death-rates from these infectious diseases were recorded in Kensington, Stoke Newington, Camberwell, Greenwich, Lewisham, and Woolwich; and the highest rates in Hammersmith, Hackney, Finsbury, Shoreditch, and Bethnal Green. The 158 fatal cases of measles were 28 above the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal last month in Hammersmith, Hackney, Shoreditch, Stepney, and Southwark. The 38 deaths from scarlet fever were 18 in excess of the average number; the greatest proportional mortality from this disease was recorded in Chelsea, the City of Westminster. Hampstead, Battersea, Deptford, and Woolwich. The 80 fatal cases of diphtheria were 33 above the average; this disease was proportionally most fatal in St. Marylebone, Hampstead, Bethnal Green, Stepney, Poplar, Southwark, and Deptford. The 34 deaths from whooping-cough were 8 below the average; the highest death-rates from this disease were recorded in Hammersmith, Finsbury, Shoreditch, Bethnal Green, and Lambeth. The 12 deaths from enteric fever were equal to the average, and included 2 in Lambeth and 2 in Greenwich. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in Paddington, Finsbury, Bethnal Green, and Deptford. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was 28·3 per cent. above the average.

HOSPITAL SHIPS AND TYPHOID FEVER AT CALAIS AND DUNKIRK.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

THOSE who realise the difficulties and dangers which must be incurred in the hasty removal of the sick and wounded in the vicinity of the fighting line—compare the retirement from Antwerp and Ostend as the enemy was rapidly closing in upon those towns—must naturally commend the idea of hospital ships stationed in seaports near to the fighting line. How useful they would have been is perhaps only realised when their great value has gone, but it is as well to docket experience for future employment. There are objections doubtless, especially structural objections, to hospital ships; but for the moment the question is not what constitutes an ideal hospital, but what is likely to prove most serviceable in war. Now, during the present war the Channel and North Sea ports, from Antwerp to Havre, have all been near to the western battlefields. The great bulk of both the British and the Belgian wounded are brought to Boulogne, Calais, and Dunkirk. They were not, however, kept on board floating hospital ships, but were brought over at once to England unless considered too seriously injured to endure the sea journey. The question that may fairly be mooted is whether there is not room for hospital ships in this organisation. With the approach of winter, and in spite of all the care taken, the amount of sickness will increase, and although, so far as our own troops are concerned, the general health is good, yet as the number of surgical cases has declined the number of medical cases has gone up. The inclement exposure and the necessary conditions of trenches in winter-time must favour the spread of many pathological conditions, and as the cases grow more numerous the desirability of separating the sick from the wounded becomes more pressing. Now when it is a question of receiving the wounded, whether British or foreign, and distributing them throughout the whole country, the difficulty is a more circumscribed one than that caused by the arrival on these shores of a large number of sick. Not only will there be cases among them that could ill-support the sea journey—that has occurred among the wounded—but there will be cases that have not been diagnosed and others whose reception must be guarded by public health precautions.

Hospital Ship for the Sick at Dunkirk.

The question has been already debated, although in the stress of events it has attracted no public attention. When during the month of November the Wounded Allies Relief Committee sent a deputation over to Dunkirk, they discussed this matter with the Belgian Minister of War, Baron de Broqueville. It was then generally agreed that it would be preferable not to send the sick soldiers to England but to treat them in France. Surgeon-General Mellis was very emphatic on the advantage of having a hospital ship in Dunkirk harbour. This was within 15 to 20 miles from the trenches defended by the Belgian troops. If they succeeded in fighting their way back into

Belgium the hospital ship could follow the victorious armies up to Ostend and perhaps eventually even up to Antwerp. But, on the other hand, if the Germans did succeed in breaking through and made a sudden rush on Dunkirk, as they did on Antwerp and Ostend, what a great relief it would be to know that at least the sick were safe, that they need in no wise be disturbed. On the approach of danger steam should be kept up and in a few turns of the screw the hospital ship would be making for the nearest secure haven. The advantages of such an arrangement are obvious, especially to those who have any conception of the ghastly struggle that took place to get the wounded on board the ships at Ostend before the Germans invaded the town. Consequently the deputation on their return from Dunkirk at once brought the whole question before the Admiralty. They suggested that one of the German liners which had been captured might be converted into a hospital ship. To this some objection was made because the legal ownership of these prize ships had not yet been clearly defined. Then there is, it appears, a German boat that was got up to look like a hospital ship, but is supposed to have been employed for the laying of mines. Now there would be a sort of retributive justice if this vessel was converted into a genuine hospital ship. However, on closer examination it was found that this proposal was not very practical. In the interval a former liner has been inspected, and hopes are entertained that it will be possible, without much further loss of time, to convert her into a hospital ship to be stationed in Dunkirk harbour.

Hospital Ship for Typhoid Fever Cases at Calais.

While these negotiations are proceeding another and much graver matter, the presence of typhoid fever in the northern fighting area, has to be considered. At the beginning of the month Major H. Stedman, R.A.M.C., writing to the *Times* from Calais, announced the occurrence of cases of typhoid fever in that city in numbers which seemed to be assuming the proportions of an epidemic. The existence of numerous cases is undoubted, but the extent to which the Belgian army is affected has been exaggerated, authoritative information putting the number of cases in that army at only 120. Still, the danger is present. The civil population in West Flanders and the north-east of France is likely to suffer together with the Belgian army and such French and British troops as may be near at hand unless the preventive measures now being rapidly and drastically undertaken are successful. Major Stedman described some 20 to 30 fresh cases arriving per day at Calais, and made no exaggerated demand when he suggested there should be a hospital ship in the harbour large enough to take at least 300 cases from the town of Calais. The medical correspondent of the *Times* reports that a convent at La Panne has now been secured as an isolation hospital. The joint committee of the British Red Cross Society and the Order of St. John have made a grant of £10,000 to be expended at once, under the direction of Sir Arthur Sloggett, acting as their chief commissioner, and we must all hope that the evil taken in hand quickly will soon be got under.

A Further Effort Needed.

There are ships and to spare lying idle in English docks. Many of them are prize vessels, and if they can be immediately employed for a useful purpose, this being war time, little legal points should not be allowed to stand in the way. If, as seems most probable, a big ship can be converted into a big hospital more rapidly and more cheaply than a new hospital can be built on shore, there should be no hesitation. An epidemic may be as fatal and represent as great an emergency as a decisive battle. When artillery comes into action no delay is allowed so as to ascertain the private property rights that exist within the range of fire. If we have ships that can be used let us use them with equal alacrity. Already the admirable care taken to supply ample food to our troops in the field and to watch over the sanitation of camp and trench has saved thousands of lives. Now a further effort is needed. The heroic but shattered Belgian army has no longer any hospital accommodation remaining, and probably it has not the means of sterilising the water drunk by the brave troops it still keeps in the field. Let us at once and promptly supply both.

All along the line from Nieuport to Ypres, especially in the neighbourhood of Dixmude, the floods that have barred the way to the invaders have emptied cesspits and middens and spread their contents far and wide. In these waters there are also many corpses. According to the uncertain news that reaches us from the German side, typhoid fever already seems to be far more prevalent among our enemies than among our friends. That, however, only adds to the danger on both sides by augmenting the risks of water contamination. Therefore we need at once, and on the largest possible scale, means for sterilising water, for destroying the dejecta of patients, and isolation hospitals.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Tetanus.

THE treatment of tetanus properly engages the attention of the medical world at present, for whatever may be the nature and gravity of wounds in themselves, all alike become, if not incurable, at least very difficult to deal with when they are accompanied by tetanus. At the Académie des Sciences on Nov. 9th the Prince of Monaco read a communication by Dr. Caillaud and Dr. Corniglion on a method recently practised by them in the hospital of Beausoleil on four patients showing symptoms of differing intensity, two mild and two very severe. They had recourse to Baccelli's method of injections of phenol, to which were added intravenous injections of lantol or colloidal rhodium. The phenol was used in a 1 per cent. solution, an intramuscular injection of 40 c.c. to begin with being given daily. This amount was progressively increased to 70 c.c., then decreased after a clear amelioration of the patients' condition. Later the 1 per cent. solution was replaced by a 2 per cent. solution, the doses of which were naturally halved. Of lantol, in the two very grave cases, an intravenous injection of 6 c.c. was made every two days until all danger seemed to be over, in these cases about eight days. The four cases thus treated were cured. The sole inconvenience noted was an indurated erythema following the use of the 2 per cent. solution, which, however, quickly disappeared. The improvement occurred rapidly and progressively, a definitive cure being obtained in from 15 to 20 days. The authors also state that the same treatment practised at Cannes was successful in all of five cases treated.

Medical Life in Paris.

The Académie de Médecine has had before it some very interesting subjects, all naturally having relation to warfare. M. Walther discussed surgical intervention in the injury of nerve trunks of limbs caused by projectiles. He has operated six times. When the pains are very lancinating it is desirable to operate early before cicatrisation of the cutaneous wound. In cases with complete paralysis but without pain it is better to await cicatrisation of the wound. The results of these operations have been very satisfactory. M. Langlet, the heroic mayor of Rheims, has been unanimously elected to the vacant National Associateship at the Académie de Médecine. The Academy was indeed happy thus to testify its admiration for his valiant attitude in the recent misfortunes of the city. On Nov. 24th Dr. Tuffier called attention to the use by Germans of explosive bullets obtained by reversing the bullet in the cartridge, so that the point was in contact with the powder, the flat soft core of the bullet being thus exposed. Bullets thus used are violently explosive on contact with resistance. Their range is of course very much lessened, but with trenches in close vicinity that is a matter of small importance. Cartridges thus converted have been found in rifles collected on the field and in the pouches of soldiers. M. Terson read a communication on the treatment of wounds of the eye, which have been very prevalent in this war. In it he showed the dangers of certain useful antiseptics when applied to the eye and detailed the necessary precautions. He reported several of his cases of extraction of projectiles, and recommended the suture of wounds of the eye, facilitated by new methods and material, with a view to avoiding ablation of the eye. At the Académie des Sciences M. Laveran dealt with exanthematic typhus and insisted on its prophylaxis, which is very simple. M. Laveran recalled that as typhus was rapidly developing in the German trenches it was necessary when German prisoners were taken to subject them to the necessary hygienic cleanliness, the non-observance of which would threaten the allied lines, which are at present happily free from it. It must be remembered, however, that the Germans use the word "typhus" with or without qualification for enteric fever sometimes. Finally, at the Société de Biologie M. Weinberg has reported some of his studies from the bacteriological point of view into a certain number of cases of gaseous gangrene among the English wounded.

The Diminution of the Birth-rate in France.

The diminishing birth-rate, disquieting as it always is, is more so at the present time, when it has so important a bearing on events. The births fell from 750,651 living children in 1912 to 745,539 in 1913. So low a figure had never been recorded, with the exception of 1911, when it was regarded as deplorable. To estimate the lamentable and continued shrinkage of the French birth-rate it suffices to recall that the annual mean of living births was 945,000 during the period 1872 to 1875, that since 1907 the number of births has fallen below 800,000, and since 1911 below 750,000. That is to say, that in less than 40 years the births in France have diminished by 200,000 a year. The proportion of living children notified to 10,000 inhabitants was 188 in 1913, as against 190 in 1912, 187 in 1911, 196 in 1910, and 205 in 1906. The shrinkage increases year by year. It is true that in all the great countries of Europe the birth-rate is decreasing, but in a much less degree than in France, and, moreover, the annual excess of births over deaths is proportionately from six to ten times greater than in France. Thus, for 1912 the excess of births over deaths per 10,000 inhabitants was in France only 15. In the same year it was in the Low Countries 158, in Italy 140, in Hungary 130, in the German Empire 127, in Austria 107, and in England 105. Last year the excess was 41,901 births, or only 10 per 10,000 inhabitants. The excess of 1912 was 57,911, or 15 per 10,000. There has thus been a diminution of one-third. This diminution springs from a simultaneous deficit of 5112 births and an increase of 10,898 deaths. Last year an excess in births was noted in 49 departments in place of in 56 in 1912. The departments in which the birth-rate exceeds the mortality are those of the Nord, Pas de Calais, Bretagne, the frontier regions of the Nord-Est, Limousin, and Corsica. On the other hand, Normandy and Dauphiny continue to depopulate. The proportion of births per 10,000 inhabitants was 196, as against 198 in 1912. The departments in which the birth-rate was highest were Pas de Calais, 266 children per 10,000 inhabitants; Finistère, 259; Morbihan, 248; Seine-Inférieure, 240; Meurthe and Moselle, 239; Côtes du Nord, 236; Lozère, 219; Doubs, 217; Nord, 216; Mayenne, 213; Vendée, 211; and Vosges, 210. Those in which it was lowest are the Valley of the Garonne and Bourgogne; Gers, 129; Lot et Garonne, 134; Yonne, 137; Nièvre, 141; Allier, 143; Lot, 145; Haute Garonne, 147; Gironde, 148; and Ariège, 149. The number of deaths, 703,638 (stillbirths 31,119 excluded) is greater by nearly 11,000 than that of 1912, which was the lowest recorded since the beginning of the present century. The ratio of deaths for the entire population was 178 per 10,000 inhabitants, as against 172 in 1912, 196 in 1911, and 179 in 1910. The death-rate has risen in 64 departments, and particularly in the Bouches du Rhône, the Dordogne, the Var, Haute Savoie, Corsica, the Somme, Haute Vienne, Aveyron, and Tarn-et-Garonne. The Norman and Breton departments continue among those furnishing the largest proportion of deaths.

Ambulance Barges.

Four ambulance barges, each containing 125 beds, with full necessary equipment, including radiographic installations, moored on the Seine at Paris, were officially inspected and approved on Nov. 26th. These vessels search such districts as they can reach for wounded and transport them to the base hospitals. Each vessel has a complete medical and nursing establishment. They are towed at a rate of 100 kilometres in 24 hours.

Dec. 7th.

Obituary.

WILLIAM OSCAR JENNINGS, M.D. PARIS, M.R.C.S. ENG.

THE death of Dr. Oscar Jennings, formerly of Paris, took place suddenly in Ramsgate on Nov. 23rd, aged 63. He only returned to this country to live in October of last year, after a residence in Paris of about 35 years.

William Oscar Jennings was born in London in 1851. He studied medicine at Guy's Hospital and in 1873 was admitted a Member of the Royal College of Surgeons of England. After qualifying he went to New Zealand, where he practised for two years, but in 1875 he returned to Europe and settled in Paris. He entered the University there, and after passing the necessary examinations graduated as M.D. Paris in 1878, choosing for his thesis the subject of Metallotherapy. He became closely associated with Professor Ball and thus his mind was turned in the direction of mental and nervous diseases. In 1878 he published a comparison of the effects of various forms of treatment in hysteria. In 1882 he translated into French Gowers's "Diseases of the Spinal Cord," and in the following year Weir Mitchell's book on "Neurasthenia." In the meantime he had become a strong supporter of Sayre's mechanical treatment of spinal complaints, a method which at that time found few adherents in France, and published in French a book thereon. In 1887 Dr. Jennings was appointed medical electrician to the Clinique des Maladies Mentales at the Asile Ste. Anne. About the same time he became enthusiastic on the subject of cycling from a hygienic point of view, and in 1888 he published "La Santé par le Tricycle," which reached a third edition in the following year. He accomplished much for the popularisation of cycling, both by subduing prejudice and by combating the apprehensions of the profession concerning its possible dangers, especially in regard to women, and his services in this direction were recognised by the Union Velocipédique Française, which awarded him its gold medal.

Of late years Dr. Jennings had devoted himself to the study of the morphia habit, on which he published several books, besides a number of articles in French medical periodicals and in the columns of THE LANCET. The essentials of the method of treatment recommended by him consisted in supporting the heart during the period of enfeeblement that immediately follows withdrawal of the drug, and in the neutralisation of the hyperacidity by sodium bicarbonate. He also called attention to the local erythematous patches and the puffiness of the face that accompany the toxic effect of antipyrin, which is sometimes associated with the taking of even very moderate doses. In 1912 he published in French a very interesting historical and therapeutic essay on the Russo-Turkish bath, and he was engaged upon further literary work on the same subject at the time of his death. During a large part of his residence in Paris he acted as the Special Correspondent to THE LANCET.

Dr. Jennings was buried at Hendon Park Cemetery. He was entitled to sepulture in Père La Chaise, but the circumstances of the war forbade removal of the body to Paris. He leaves a widow and one daughter.

ROYAL HANTS COUNTY HOSPITAL.—At the last quarterly meeting of the Court of Governors it was stated that since the commencement of the war 22 cases of British wounded had been received, 68 wounded Belgians, and 87 cases of accident or illness from the military camp in the neighbourhood of Winchester. Fewer applications for admission had been received from the civil population. An overdraft of £3222 3*s.* 5*d.* was reported, as compared with £2792 19*s.* 10*d.* at the beginning of the quarter.

CIVIL AND MILITARY SANITATION IN THE TROPICS.—The first of two Chadwick public lectures was delivered by Sir Ronald Ross, K.C.B., F.R.S., at the London School of Economics on Dec. 4th, Sir James Crichton-Browne (Chadwick trustee) being in the chair. The lecturer pointed out that the relations between administration and public sanitation had not been completely discussed. The older theory of government, well enunciated by David Hume, was that government had "no other object or purpose but the distribution of justice." This idea had now been abandoned in favour of the view that government should do everything possible for the prosperity of its subjects. The lecturer then traced the history of tropical sanitation. Civilisation had been excluded from large tropical areas such as tropical Africa, largely because grave tropical diseases were present which had not been investigated until recently. The causes and prevention of many of these maladies were now understood; but the question still remained whether public administration could utilise the preventive measures suggested by science. Examining the history of this question, the lecturer pointed out that in the old days medical and sanitary matters were originally in the hands of the priestly caste, many of whose religious injunctions were really of a sanitary nature. In the Middle Ages little attention was given to sanitary matters, and epidemics often provoked ridiculous attempts at prevention. The modern history of tropical sanitation began from the time when the European nations commenced colonisation. About the middle of last century sanitation in Europe began to approach its modern growth and naturally affected tropical sanitation.

Correspondence.

"Audi alteram partem."

EPSOM COLLEGE.

To the Editor of THE LANCET.

SIR,—Will you allow me to call the attention of your readers to the educational and pecuniary advantages offered by Epsom College to the sons of medical men. These are briefly described in the advertisement appearing on the outside page (iv.) of the present issue of THE LANCET; but I should like in this letter to emphasise the facts that this year 10 boys out of 13 passed the whole of the first examination for medical degrees of the University of London, and that 18 boys out of 23 passed the matriculation examination of the same University, six of them gaining a first class.

May I also take this opportunity to remind those of your readers who are not already subscribers to the Royal Medical Foundation attached to Epsom College that this Foundation provides gratuitously an education of the highest class, together with maintenance, clothing, and pocket money, for 50 necessitous sons of medical men, and gives pensions of £30 each to 50 aged members or widows of members of our profession in reduced circumstances.

It is necessary to procure a sum of about £4500 a year in voluntary contributions to enable the continuance of these benefits to the medical profession; and as the numerous calls in connexion with the war are causing both the withdrawal and the curtailment of some annual subscriptions, I trust that numerous fresh contributors will be forthcoming to assist and encourage the Council at a particularly anxious time.

I am, Sir, yours faithfully,

HENRY MORRIS,
Honorary Treasurer.

Nov. 30th, 1914.

GAS GANGRENE.

To the Editor of THE LANCET.

SIR,—The report signed by Sir Anthony Bowlby and Dr. Sidney Rowlands which you have published on gas gangrene amongst our troops, in THE LANCET of Nov. 28th, is of considerable interest. A short account is given of the bacteriological findings, clinical aspect of the disease, and what they consider to be the necessary methods to adopt for the prevention of the spread of infection to others. Sir Anthony Bowlby and Dr. Rowlands state in this report that in their opinion the infection is directly due to wound contamination from the soil. In the Transactions of the Pathological Society of London in 1905 Mr. Percy Sargent and I published two cases of gas gangrene due to the bacillus aerogenes capsulatus and caused by infection of the wounds with street mud. We refer to the beneficial action of hydrogen peroxide on this type of infective gangrene. Since that paper was published in 1905, I have seen a large number of cases of gas gangrene due to the bacillus aerogenes capsulatus, and in every case the wounds were contaminated with manured earth or street mud. In several instances continuous flooding of the tissues with hydrogen peroxide (20 vols.) through deep incisions has led to recovery by rapid reduction of the general toxæmia and of the local condition.

Sir Anthony Bowlby and Dr. Rowlands draw special attention to the bruising of the tissues in their cases and to the slight degree of pyrexia. In every case which I have seen bruising of the tissues has been most obvious and appeared to be closely related to the actual starting point of the gas gangrene, but severe pyrexia occurred in several of the cases which I have investigated. Probably the most interesting fact for discussion is the presence of the bacillus aerogenes capsulatus in the tissues without gas gangrene. I have cultivated this organism from cases of peritonitis, puerperal fever, bone abscess, and cystitis without the slightest evidence of emphysematous gangrene of the affected tissues, and although no special precautions have been taken by the nursing staff and those in charge no case of direct infection has ever occurred to my knowledge. This fact is of special importance when we consider the comparative frequency of severe infections caused by streptococci among those who come in direct contact with the infected tissues. It might be of interest to refer to a case of suppurative arthritis due to a shrapnel wound from which I obtained a pure culture of the bacillus aerogenes capsulatus. Gas gangrene was not present at the time of operation, and did not develop subsequently, although the infected pus came in direct contact with the wound. These observations on infections caused by this bacillus in man are in accordance with our knowledge of the subject derived from experimental data. Spreading gangrene can be readily produced in guinea-pigs by inoculating the animals with the bacillus, together with some fluid, which in itself is capable of acting upon the healthy tissues. An active growth of the organism in milk affords perhaps the most favourable material for experimental purposes. In my experience everything tends to show that this bacillus requires especially abnormal tissues before it will incite gas gangrene, otherwise it may simply give rise to ordinary suppuration. Whether the gas gangrene to which Sir Anthony Bowlby and Dr. Rowlands refer in their report is due to the bacillus aerogenes capsulatus alone or to other anaerobic bacilli with distinctive and practical differences will no doubt be finally settled.

I am, Sir, yours faithfully,

Dec. 6th, 1914. LEONARD S. DUDGEON.

"STRUMOUS HABIT OF BODY."

To the Editor of THE LANCET.

SIR,—Mr. Percy Dunn desires to know precisely what I mean by the term "strumous habit of body." I will try to explain to him as concisely as I can. I think we must go back to Celsus for an early use of the term struma. We find it now commonly used as a euphemism for scrofula, being a less disquieting one to employ when speaking of this condition in polite society. It is less precise than the term scrofula, because it has been, and still is, applied to other diseases—e.g., goitre—and it is employed to designate many lesions which are regarded as solely dependent on tuberculous invasion, which means no less and no more than the intrusion and growth of the bacilli of tubercle in various textures of the body.

In 1846[1] Dr. Robert M. Glover shrewdly propounded what I venture to regard as the correct view of this matter, pointing out that a careful distinction must be made between the predisposing constitution and the actual processes of tuberculosis, between the *ens in potentia* and the *ens in actu*, and that thus the subjects of scrofula widely diverged from normal health before tuberculous deposits took place. Mr. Dunn is therefore correct in presuming that I regard "scrofula" (but not necessarily) "as a pre-tuberculous state." He, however, proceeds to maintain that reasons exist for believing that the term, so considered, is misleading because many of the lesions now commonly called scrofulous are really manifestations of tuberculosis. I agree so far, but when he sets forth his main reason for objecting to the term strumous habit of body I must decline to accept his view of the question as set forth in the following paragraph: "Strumous symptoms, so-called, which are not tuberculous are evidence of perverted metabolism, due to hypothyroidism, the proof of which is furnished by the fact that under thyroid treatment these strumous symptoms vanish." Mr. Dunn thus alleges that he has abolished scrofula. This is good news for the victims of the strumous habit of body, for if we can materially alter this inborn textural quality we shall greatly reduce the inroad of tuberculous disease in multitudes of people.

A diathesis, or bodily habit, represents a soil, and this soil is favourable or unfavourable in different subjects to various irritants or infections. This doctrine, which has long been held and taught in the Edinburgh and Parisian schools, and by Paget, represents a great truth in practical medicine. Modern studies in bacteriology have largely confirmed the value of this teaching. To-day too much attention is paid to the seed, while the soil is largely ignored. The idea that "scrofula is tuberculosis," as declared by Koch, is in my view utterly wrong, and this opinion issued from the laboratory and not from clinical study. A scrofulous individual is all his life scrofulous, whether he be infected with tubercle or not. As has been well declared, "On nait, on vit, et l'on meurt scrofuleux." Tuberculous disease is only too likely to alight and flourish in such subjects, but it is no essential part of this abnormal habit of body. Scrofulous persons may, and certainly do, often reach old age, under favourable conditions, without contracting any overt or disabling tuberculous lesions. They commonly provide a favourable soil for all irritants and infections, being vulnerable beyond others, and slow to heal.

Lastly, I would note the fact in relation to this correspondence that in obvious cases of hypothyroidism such as myxœdema and cretinism, we rarely encounter tuberculosis as a complication.

I am, Sir, yours faithfully,

Grosvenor-place, S.W., Dec. 5th, 1914. DYCE DUCKWORTH.

THE RADICAL CURE OF VARICOCELE.

To the Editor of THE LANCET.

SIR,—It is possible that a very simple method of excising affected veins may be useful at this time when many youths wish to have defects removed in order to fit them for active service. Even at the risk of being considered absurdly elementary, I venture to mention a few anatomical facts well known to medical students. The pampiniform plexus consists of eight to ten veins, which lie in front of the vas deferens, with the peculiarity—suspension of tortuous vessels, with defective valves, feebly supported in loose areolar tissue, a combination which favours dilatation and sagging. And it is almost superfluous to add that the affection commonly known as varicocele is essentially a varicose condition of this anterior bundle of veins. Surgical intervention must be confined solely to excision of the offending vessels in order to avoid possible interference with the normal circulatory requirements of the testis.

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[1] Fothergillian Prize Essay.

If a little attention be devoted to the following simple manœuvre there will be no reason to fear subsequent testicular atrophy. Standing on the left side of the patient for left varicocele, I firmly grasp the whole structures of cord, midway between the external ring and testicle, between my left thumb and left index finger. Having assured myself that I feel the vas deferens securely fixed in its normal posterior position and the included skin between fingers rendered taut, I make a 1 to 2-inch incision over bulging part. With a few horizontal strokes of the knife the infundibuliform fascia is exposed, and when this is opened the pampiniform plexus juts into the wound. With a little further dissection the presenting veins are thoroughly exposed through the whole length of the incision; these are now caught up in mass by a pressure forceps, and the handle of scalpel completes their isolation from underlying structures. Catgut ligatures are then applied above and below, and an intervening segment (2 inches) of varicose clump excised. The stumps are approximated and testicle elevated by tying the upper and lower ends of the ligature together (Bennett).

The one cardinal factor in this three-minute, three-instrument (knife, forceps, and needle) procedure is boldly to continue horizontal strokes with the knife, and not to relax the left thumb and finger grip until the pampiniform plexus pops into view.—I am, Sir, yours faithfully,

JOHN O'CONOR, M.A., M.D. T.C.D.,
Senior Medical Officer, British Hospital, Buenos Aires.
Oct. 24th, 1914.

CHLORALOSE AS AN ANÆSTHETIC.

To the Editor of THE LANCET.

SIR,—Some few years ago Professor Richet, of Paris, introduced chloralose, a compound of chloral and glucose, as an anæsthetic for animals in experimental physiology. Although it is not much used in this country it is an invaluable drug for the purpose. Having had some experience of its very satisfactory action in cats and dogs it seemed to me that there is no valid objection to its use, or at any rate to giving it a trial, for general anæsthesia in man. Such trial may have been given it, but if any published reference to it has appeared it has escaped my notice.

Chloralose can be administered by the mouth, by the rectum, or subcutaneously. It is rather insoluble, but is very easily mixed with milk or butter. Mixed with the latter and spread on a bit of bread it is readily swallowed by a dog, and this is the method usually adopted by me. About 20 or 25 minutes after swallowing it the animal begins to show symptoms. The first thing noticed is a weakness of the hind limbs and a staggering gait. This weakness continues until paralysis of these limbs sets in at a time when the fore part of the body is still supported by the fore-limbs, so that the attitude is characteristic. In this stage or a little earlier salivation begins, and without evidence of restlessness or excitement the paralysis spreads to the fore-limbs. The animal is still fairly wide awake though stupid and shows no sign of discomfort or anxiety. Finally it goes quietly to sleep.

The reflexes are all unaffected or slightly exaggerated, the superficial more so than the deep. Before sleep supervenes the animal recognises a threatening movement, but the sense of sight apparently goes before that of hearing. For some time after the eyes have been closed in sleep the animal responds to sound, such as a whistle, by a pricking of the ears or a movement of the head. Even very slight sounds cause a response at a time when the animal is past opening its eyes, but ultimately a stage is reached about one hour or a little more after the dose is swallowed, when sound fails to cause a response. The reflexes are unimpaired throughout. In the early stages of paralysis onset the animal may walk about and may void urine. In such a case it sometimes topples over, but there is no sign of distress or discomfort. More often it remains quiet from the start.

The dose is 1 gramme per kilo of body weight. The anæsthesia is complete and lasts about two hours. A smaller dose may be employed and supplemented with ether.

From the humane point of view, if from no other considerations, chloralose is a very desirable anæsthetic in animals which sometimes show nervousness before being brought under the effects of such anæsthetics as ether, chloroform, &c. For effectiveness and convenience it is far superior to an anæsthetic which has to be continuously administered with careful observation and control of anæsthesia depth.

I am, Sir, yours faithfully,
D. T. BARRY, M.D. R.U.I., F.R.C.S. Eng.,
Professor of Physiology, University
College, Cork.
Nov. 22nd, 1914.

DISTRICT NURSING IN LONDON.—The inaugural meeting of the Central Council for District Nursing in London was held on Dec. 1st at the Local Government Board. The council has been established as the result of two previous conferences, at which it was resolved :—

> That a Central Council for London be established consisting of representatives of those engaged in district nursing and of others interested in the question, with the object of so systematising the arrangements for district nursing that there shall be adequate provision throughout the county.

There was a full attendance, including the President of the Local Government Board, Sir William Church, Sir Dyce Duckworth, Sir William Collins, Dr. W. J. Howarth, Dr. Lauriston Shaw, Dr. Christopher Addison, M.P., Mr. E. B. Turner, Dr. Martindale Ward, Dr. Major Greenwood, Dr. H. R. Carter, Dr. C. J. Harrison, and Dr. Charles Porter. After an introductory speech by Mr. Herbert Samuel, Sir William Collins was elected chairman and Dr. Addison vice-chairman of the council, and an executive committee of 25 members was appointed.

NATIONAL COUNCIL FOR COMBATING VENEREAL DISEASES.—The inaugural meeting of this council was held at the house of the Royal Society of Medicine on Nov. 11th under the chairmanship of Sir Thomas Barlow, Bart., and a report of the proceedings appeared in THE LANCET of Nov. 14th. The provisional executive committee met on Nov. 23rd and directed that the minutes of the inaugural meeting should be circulated to all members of the National Council. In view of the amount of work which must be undertaken without delay in connexion with the present situation brought about by the war, the executive committee decided to appoint two subcommittees to endeavour to give immediate effect to the recommendations of the council. The honorary secretaries of the organisation are Dr. Douglas White and Mrs. A. C. Gotto, and the offices are at Kingsway House, Kingsway, W.C.

THE WAR.

THE KING AT THE FRONT.

The King spent nearly the whole of last week with his troops in France, and it is needless to say how much his visit was appreciated by all ranks of the Expeditionary Force and by the French and Belgian armies with whom they are coöperating. While in France His Majesty conferred decorations upon a number of officers, non-commissioned officers, and men, including several members of the Royal Army Medical Corps, whose names have appeared in official lists. The King also found time to encourage the medical personnel of the Expeditionary Force by making visits to many of the base hospitals, receiving hospitals and field hospitals, and showed his well-known keen insight into the details of hospital organisation and equipment, as well as his sympathy with the brave soldiers who are lying sick and wounded in a strange country.

THE DISTINGUISHED SERVICE ORDER.

To the list of officers of the Royal Army Medical Corps who have been appointed Companions of the Distinguished Service Order, in recognition of their services with the Expeditionary Force, published in THE LANCET last week, the following names are added:—

Lieutenant Henry Beddingfield:

For coolness and daring in repeatedly superintending removal of wounded from the firing line under heavy fire.

Major Sidney George Butler:

At Missy, on Sept. 15th. For coolness and courage in continuing all day to collect wounded under severe shell fire.

Captain Malcolm Leckie (deceased):

For gallant conduct and exceptional devotion to duty in attending to the wounded at Frameries, where he was himself wounded.

MENTIONED IN DESPATCHES.

The supplementary list of names to be added to those mentioned for meritorious service in Sir John French's despatch of Oct. 8th includes the name of Lieutenant H. Beddingfield, R.A.M.C.

Major-General Paris, commanding the Royal Naval Division, in his recently published despatch reporting the proceedings around Antwerp from Oct. 3rd to 9th, calls attention to the good services rendered, among other staff and brigade officers, by Fleet-Surgeon E. J. Finch, R.N.

CONSULTANTS TO THE FORCES.

Sir Berkeley Moynihan left for France on Dec. 4th to take up his appointment as Consulting Surgeon with the British Forces Oversea. Sir Bertrand Dawson, physician to the London Hospital, has entered upon his duties as additional Consulting Physician to the Forces, and Mr. W. T. Lister, ophthalmic surgeon to the London Hospital, has been similarly attached as Consulting Ophthalmic Surgeon.

THE CASUALTY LIST.

The following casualties among officers in the Royal Army Medical Corps and the Indian Medical Service serving with the Expeditionary Forces are officially reported:—

Killed: Major Pundit Piaraylal Atal, I.M.S., and Captain Kanwar Indarjit Singh, I.M.S.

Died of wounds: Lieutenant G. H. Chisnall, R.A.M.C.

Wounded: Major T. G. F. Paterson, I.M.S. (reported from the Persian Gulf).

Captain C. T. Edmunds, R.A.M.C., Captain F. T. Garland, R.A.M.C., and Captain E. M. Middleton, R.A.M.C., are reported through the United States Embassy to be prisoners of war.

Captain A. M. Pollard, R.A.M.C., and Captain H. G. Robertson, R.A.M.C., previously officially reported missing, are now unofficially reported prisoners of war.

CHOLERA IN CAMPS.

Experience has shown that cholera is one of the diseases liable to break out in camps or other gatherings where large numbers of men are crowded together in positions which have been chosen more for military than for hygienic reasons. The difficulty of adequately protecting sources of water-supply or providing proper latrine accommodation in such circumstances is obvious. The history of cholera during the recent campaigns in the Balkan peninsula is interesting in this connexion. Many thousands of cases occurred in 1912–13 in the Greek, Serbian, Bulgarian, and Turkish armies in the field. It is asserted that the infection was comparatively seldom waterborne, but was mainly spread by contact with persons suffering from the disease, or with infected articles, soil, or excreta. It is stated on good authority that the infection was commonly associated with dirty hands. Great difficulty was experienced in inducing recruits, especially in the Bulgarian army, to use the latrines provided for them, the men preferring to defæcate promiscuously in and around the camping-ground, the surface of which became in consequence greatly polluted with fæcal matter, some of it undoubtedly containing the specific vibrios of cholera deposited by convalescents or carrier cases. The excreta on the surface of the ground were trodden underfoot by many persons, and the boots of the soldiers were often coated with a mixture of mud and human fæces. On taking off their boots and nether garments the men's hands came in contact with this contaminated mud, and as opportunities for washing were seldom available, their meals were eaten with dirty and unwashed hands, the result being infection of the food. Though at the present moment there is, so far as we know, no cholera among the troops operating in Flanders or northern France, the possibility of the introduction of this disease cannot be lightly set aside, for the malady has been occurring in the eastern seat of war, in Galicia and other parts of Austria, as well as in Hungary. Austrian reinforcements, it is reported, have before now been sent to help the Germans in Belgium and France, and there is always the possibility of a cholera carrier being included in the drafts sent from eastern Europe to the west. If trenches occupied at one time by the Germans and Austrians were taken and reoccupied by the Allied troops it is possible that specific fæcal matter might be in these trenches. In that case the same method of contracting cholera that occurred in the Balkan camps might also easily occur in Flanders and northern France. But we know that sanitation is rigorously enforced in the British army, so that we have every reason to anticipate that the danger is reduced to the smallest dimensions. What applies to the diffusion of cholera in camps and trenches would apply equally well to the spread of enteric fever and dysentery in the same circumstances.

NEUROSES AND THE WAR.

It is no doubt somewhat early in the day to attempt to draw conclusions of wide applicability as to any connexion between the stress and strain of the war and the development of hysteria, neurasthenia, traumatic psychoneuroses, and so on. Nevertheless, those who are coming in contact with the nervous side of the cases retired from the war are beginning to notice the frequency with which hysteria, traumatic and otherwise, is showing itself, not only among the Belgians, but also in officers and men of our own forces. In many cases the agency of auto-suggestion can be clearly established. A Belgian soldier was hit on the back, low down on the left side, by a heavy wooden sleeper blown off a railway truck in the explosion of a shell; he was knocked down half unconscious from shock and pain combined, and eventually brought to this country with paralysis of the left leg, which on examination turns out to be a hysterical palsy of the left leg from the hip downward of classical type. Another Belgian was leaning his left shoulder against the parapet of a trench when a shell blew in the whole side of the trench, and he was partly submerged in a mass of earth and stones. He instantly felt numbness and weakness of the left side of the body, symptoms which are now found to be characteristically hysterical. A lieutenant in a North Country regiment was invalided back to the base with so-called dysentery, on recovery from which he noticed that his legs were weak and painful. A diagnosis of neuritis was made, but on reinvestigation at home he was discovered to be suffering from typical hysterical paraplegia. Another officer strained his right side in carrying an unusually heavy wounded man to a safe position behind the trenches. Three days later he observed that he was dragging his right foot and that his right arm was weak, and on coming under expert observation he was found to present the familiar signs of hysterical hemiplegia. Such cases as these and others that might be quoted present features not only of clinical interest but of scientific and theoretical importance. It is curious that the patients themselves admit that they were in excellent physical condition before the incidents occurred to which their illness is attributed, and that questioning fails to elicit any history of analogous or indeed any nervous symptoms in earlier years. It may be, of course, that the rigor of the campaign has influenced them more than could be suspected, and that the particular incident comes as an exciting cause. But not all cases can be thus explained. Even though we grant that auto-suggestion is at work, the question remains whether physical factors such as fatigue, hunger, the strain of responsibility and constant attention on the organs of special sense, repeated air concussion from high explosives, and so on, in some unrecognised fashion so impress the nervous system of those who apparently were entirely normal as to pave the way for the action of such a force as auto-suggestion. It is a matter, at least, for serious discussion. Again, it seems at present to be the case that traumatic hysteria is more common than traumatic neurasthenia, although in industrial cases the latter is probably the more frequent neurosis. It would be a mistake to conclude hastily from insufficient data, but in this connexion also there is matter for fruitful investigation at a later stage. A number of important considerations in this respect may be left aside for the present. The question of the influence of emotion in the development of hysteria has often been discussed. M. Babinski, it will be remembered, holds that hysteria never originates in emotion, and instances in support of his views the absence of hysteria after the severe mental strain produced in the inhabitants who suffered from the earthquakes at Messina. The data furnished already by four months' war suggest that these views require revision. An opportunity has arisen for the reinvestigation of these vital problems of nervous and mental disease of which competent and experienced observers, we are glad to think, are already fully availing themselves.

OBITUARY OF THE WAR.

EDWIN BEDFORD STEEL, B.A., M.B., B.CH. DUB.,

MAJOR, ROYAL ARMY MEDICAL CORPS.

Major E. B. Steel, who died on Nov. 23rd from wounds received in action, was born in 1871 at Aldershot. He was educated at Rugby, where he won the "Crick" and was in the football XV., and at Trinity College, Dublin, and Dr. Steevens' Hospital, where he also distinguished himself as a footballer. He graduated M.B., B.Ch. in the University of Dublin in 1893, and joined the Royal Army Medical Corps in January, 1895, being promoted captain in 1898 and major in 1906. He served in India from 1897 to 1903, and again from 1907 to 1912, when he was made an Associate of the Order of St. John of Jerusalem in recognition of his services in connexion with plague duty. During the intervening period at home he was in command of a company at the Royal Army Medical Corps depôt at Aldershot, and qualified as a mental specialist. After his return in 1912 Major Steel was in command of the Higher Barracks Hospital at Exeter until the outbreak of war. He then went abroad in command of Field Ambulance No. 20, and was mentioned in dispatches for his good work at the army headquarters. At the beginning of October he was appointed Assistant Director of Medical Services attached to the 1st Cavalry Division. He was wounded by shell-fire on the morning of Nov. 23rd at La Clytte, and died that afternoon in Bailleul Hospital. Major Steel held the South African medal and the Durbar medal. He married in 1899, and leaves a widow, two sons, and a daughter. By his death the Royal Army Medical Corps loses a very able and devoted officer.

HUGH JOHN SLADEN SHIELDS, B.A., M.B. CANTAB., M.R.C.S. ENG., L.R.C.P. LOND.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant H. J. S. Shields, who was killed in action near Ypres on Oct. 20th at the age of 27, was the son of the Rev. A. T. Shields, rector of Thornford, Sherborne. He was educated at Loretto School, Jesus College, Cambridge, and the Middlesex Hospital, where he was a scholar and prizeman, and qualified at the Conjoint Board in 1912, obtaining his medical degree at Cambridge last year. He received his commission in the Royal Army Medical Corps in July, 1912, and was attached to the Irish Guards when war broke out. Shields was a fine oarsman and a man of outstanding character. He stroked the Cambridge University boat in 1910, won the Lowe sculls, and rowed in the winning international eight at the

Ghent regatta in 1911. In the retreat from Mons he was captured while carrying out his medical duties, but rejoined his battalion ten days later, to the great joy of the men, who were devoted to him. After many days further fighting he was shot while heroically tending the wounded under heavy fire in the course of an attack upon a German position in Belgium. The Officer Commanding the Irish Guards in the course of a letter to Lieutenant Shields's parents has written: "The way in which he insisted on attending to wounded men under fire was the admiration of all of us....... A better and braver man never was." His name has been mentioned in Sir John French's dispatches, and his early death, although exactly the end which he would have chosen for himself, is felt deeply by a wide circle of friends.

THE BRITISH RED CROSS SOCIETY.—The summary of the work for the week ending Dec. 5th states that the number of Auxiliary Home Red Cross Hospitals accepted by the War Office to date is 544, containing beds for 16,272, including 1424 beds accepted during the past week, and distributed among the Army Commands as follows: London, 877; Southern, 5092; Aldershot, 787; Eastern, 3831; Northern, 2565; Western, 2919; Irish, 201.

The arrangements in connexion with Lord Iveagh's generous offer to establish, equip, and maintain for a year a hospital of 200 beds at Netley have now been completed. It will be known as the "Irish Hospital" and will form an extension of the existing British Red Cross Hospital there.

A request having been received from the Director-General, Army Medical Service, through the Hon. Arthur Stanley that the Netley British Red Cross Hospital should be devoted entirely to the reception of Indian wounded; as a temporary measure preparations have been made to receive as many as possible. All the wards are now practically ready.

It is gratifying to record that the whole of the 1650 beds for the "King George" Hospital, London, have already been endowed, and a sum of £41,250 has been received under this heading alone.

THE SECOND GENERAL EASTERN HOSPITAL (TERRITORIAL), BRIGHTON.—A medical correspondent sends the following notes of some interesting cases admitted from the front:—*Some cases of secondary hæmorrhage.*—Cases of secondary hæmorrhage have not been common. Of about 1000 men from the front, so far only eight cases have occurred. All followed bullet wounds, in one case of the upper part of the thigh, with secondary hæmorrhage from the external pudic artery, which was treated by ligature of the bleeding artery in the wound; a second in the lower part of the thigh, the anastomotica magna being the vessel affected. This was treated in a similar manner. The third case was a much more serious one; it was from the axilla, following a compound comminuted fracture of the upper end of the humerus. A large subcutaneous swelling very suddenly appeared under the pectoral muscles. This was incised, but it was found impossible to ligature at the bleeding point, and the subclavian artery was accordingly tied. All went well for about ten days, when hæmorrhage again occurred and was repeated on several occasions. To save the man's life it was decided to disarticulate the arm at the shoulder-joint. He is now doing quite well. The fourth case was that of a man who was shot through the palate, and who had severe bleeding from a palatine vessel some ten days later, on the separation of a large slough from the palatal wound. This was easily controlled by pressure, but the patient was in an exceedingly weak and emaciated condition on admission, and died a few hours later from exhaustion. The fifth case was that of a man with a shell wound of the right groin penetrating the bowel. In this man the piece of shell passed through the right groin, and lodged in the right iliac fossa, wounding the bowel. Fæces discharged through the opening in the groin, and brisk hæmorrhage occurred from the wound. This was opened up freely and the bleeding vessel, which was the circumflex iliac, was ligatured, the wound being left open and packed with gauze. A large piece of shell casing was removed from the wound, and the patient is doing well.

In another case a man received a bullet wound of the knee-joint. This suppurated profusely. He was suddenly seized with terrific secondary hæmorrhage from the popliteal artery. A tourniquet was at once applied and amputation at the lower end of the femur carried out. A seventh example is that of a wound of the arm, in which the bleeding was not from the main vessel, but from a branch, and was easily controlled. In the last case the wound was from a shrapnel bullet entering directly backwards just above the centre of the clavicle, which was broken in the middle into several pieces. There was a large sinus about an inch in diameter passing backwards. Secondary hæmorrhage, not extensive, occurred on several occasions, probably from the transversalis colli artery. This was easily controlled by pressure. It is hoped that, on removal of the bullet, treatment of the wound by peroxide irrigations will cause the sinus to close.

Bullet wound of kidney.—A bullet passed right through this man's abdomen, from front to back, and was followed by hæmaturia which lasted for five days and then ceased. No other symptoms were produced. This is a good example of the way in which a bullet will pass through a cavity containing delicate and important structures like the intestine without doing any damage to them.

Three cases of tetanus.—The first case was that of a man admitted for bullet wounds received at Ypres. His condition was as follows. In the right thigh there was a gutter wound four inches long and one inch broad, in the right arm a wound about two inches in diameter, and in the right axilla a ragged wound about one inch across. He appeared to be doing all right, when on the tenth day after his injury he complained that he felt stiff and that he could not open his mouth. 1000 units of antitetanic serum was at once injected and chloretone was administered, but in spite of this treatment and the repetition of antitoxin he died in about 48 hours. The second case was that of a man wounded in the forearm. When he arrived at the hospital his splints and bandage were removed. They had been on three days and no opportunity had occurred for dressing him during his transport. The arm was found to be gangrenous and was amputated. Tetanus developed two or three days later—i.e., about ten days after he had been wounded—and in spite of tetanus antitoxin and chloretone he died. The third case was very similar. A bullet wound of the arm followed by the development of tetanus in about ten days, the employment of chloretone and antitoxin, and death. This man had recovered from an attack of tetanus about ten years ago, following a bullet wound received in India. These cases seem to support the generally accepted view that tetanus with a short incubation period—i.e., less than 12 days—is a fatal disease in spite of the use of tetanus antitoxin.

Some bullet wounds of the brain.—Shrapnel bullet wound of skull. Depressed fracture. Cerebral irritation. Trephining. This man was shot in the head, the bullet causing a gutter wound of the back of the vertex three inches long. It had been sewn up at the French base hospital. On admission it was found to be suppurating and was opened up. It was then discovered that a piece of shrapnel remained in the wound, and that there was a fracture of the skull beneath. A few days later—about a fortnight from the receipt of the injury—signs of cerebral irritation (i.e., irregular pyrexia, somnolence, slow pulse, slight optic neuritis, &c.), manifested themselves. The patient was anæsthetised and the wound opened up freely. Several loose fragments of bone were removed. One of them, a triangular piece with a length of about half an inch each way, had been driven through the dura mater into the brain. The bone was chipped away all round, the loose pieces removed, and the wound left well open for drainage. The patient is doing well.

In a case of bullet wound of the brain there was a depressed fracture of the occipital region of the brain, which was opened up. An abscess, deeply seated, was found, with some loose fragments of bone. This was drained, and with the exception of some hemianopia, the patient has quite recovered. No trace of a bullet was found and none could be seen by X ray examination. Was it embedded deeply in the base of the skull, or had it struck the bone obliquely, glancing off and driving the fragments of bone in the brain in its flight?

Wound of bowel through the back.—Here there was a wound of the lumbar region which became inflamed and through which gas and fæces escaped. No treatment beyond the application of antiseptic dressings was carried out, but the wound healed well. This is a good example of the "wait-and-see" policy of bullet wounds of important cavities.

Wound of the interscapular region and neck.—In this case the wound of entry was in the interscapular region, that of exit by the side of the thyroid cartilage. Beyond the presence of a little fluid in the pleural cavity no mischief was done—an excellent instance of the curious way in which a bullet passes near many important structures without doing any damage to any of them.

A case of facial paralysis following concussion from the explosion of a shell.—In this case the man had well-marked facial paralysis on the right side due to the explosion of a shell. No part of the shell struck him, but the general shock and concussion caused paralysis of the seventh nerve. He was also deaf on the same side, but this was probably due to his ear being blocked with wax or débris. There have been many cases of concussion of nerves due to the passage of bullets through limbs, causing paralysis, loss of sensation, &c., without any actual lesion of the nerve. This has been noticed especially in the arm. They have recovered in quite a short time. Much more difficult are those cases in which recovery is delayed, and in which it seems impossible to make an accurate diagnosis between concussion and an actual lesion of the nerve.

Some fractures of the jaw.—Explosive wound of the lower jaw. A man was shot in the face, the bullet entering at the left angle of the mouth, slightly grazing it, cutting off the tip of his tongue, and making its exit through the ramus of the lower jaw. The wound was a large one, three inches by two, lacerated, septic, discharging profusely, and showing a detached piece of exposed bone, a regular "explosive wound," and one of those so often wrongly attributed to dum-dum bullets. The wound is cleaning nicely after the employment of peroxide irrigations and chlorinated soda dressings. This is an excellent method of cleansing foul wounds, and is being largely used in this hospital now. A splint is being made for this man to keep his teeth and the fragments of the bone in as good a position as possible. In another case a bullet entered through the right cheek, passing through the right upper jaw and out through the mouth, which must have been open, as no wound was caused. The wound was very septic, but has improved very considerably since admission. This case has been treated on the verandah, and probably the free exposure to fresh air has, as in most septic wounds, contributed largely to the marked and rapid improvement. In a third example a bullet entered through the body of the lower jaw and remained embedded in the middle of the tongue—a most unusual position for a missile to lodge.

Two cases of aneurysm.—In the first case the patient had a traumatic aneurysm of the first part of the axillary artery; in the second case the aneurysm was of the brachial artery. In both instances the treatment undertaken was the same—namely, cutting down on the aneurysm and ligature of the vessel above and below.

An example of temporary burial alive.—The following is an interesting case and also quite unusual. Five men were in a trench when a German shell exploded, destroying the trench shelter. Three were killed, a fourth wounded, and the fifth buried completely under the earth. Fortunately a plank fell over his chest and, to some extent, protected him from crushing. He was buried alive for four hours, and when finally dug out he had just lost consciousness. He soon recovered and went back to fight in the trenches, but unfortunately in the accident he had lost his false teeth, and was therefore unable to masticate or digest his food. As a result he became ill, and was sent home for the purpose of obtaining a new denture. This story illustrates the importance of a good set of teeth for a man on active service. Three other cases in the first convoy of 47 admitted to the Kemp Town branch of the Brighton Hospital had been invalided home for exactly the same cause—namely, inability to masticate and digest the field food of the army on account either of lack or decay of teeth.

A man with complete loss of memory.—A man was admitted who had lost his memory. The only things he knew when admitted were his name and regiment. There was no sign of injury and no history whatever. No one knew anything about him, and one can only speculate that he received some very severe shock which has caused him to get into this condition.

Pickaxe wound of arm.—This very unusual method of producing a wound was due to the accidental infliction of a stab from a pickaxe by a comrade in the trenches. There was a punctured wound of the upper arm, which was profusely suppurating. It was treated by peroxide irrigation, and as it had most certainly been contaminated by earth he was given a prophylactic dose of antitetanic serum. Large numbers of cases of wounds have received this prophylactic injection before admission to hospital, in some instances even on the field.

Extensive flesh wounds.—Numbers of examples of large flesh wounds have been met with. For instance, one man had two large shrapnel injuries in the legs, one in the back part of the left thigh, a large foul wound, 12 inches by 6, and another slightly smaller on the back of the right calf. The improvement under treatment (peroxide washings, chlorinated soda dressings, with rest, good food, and fresh air, an ideal treatment for septic wounds) was very marked and immediate. Scarlet-red ointment is being applied to wounds of this description when they lose the foulness which they so often present on admission.

Some wounds of the eyeball.—There have been a few cases of wounds of the eyeball. In one man the left orbit was badly damaged and the eyeball lacerated by a bullet. This was removed in France. Strangely enough, up to now the man has no idea that he has lost his eye. Was it an eye blind or practically blind before injury, so that he does not miss it? In another instance a man had a scalp wound and a traumatic cataract, probably due to the penetration of a minute fragment of shrapnel. As there is in all likelihood a foreign body in the eyeball, an X ray examination is being made, and the eye will be removed if necessary. Another man had a small penetrating wound of the cornea, causing traumatic iritis, with anterior synechia, and cataract. A fourth case presented a gutter wound of the outer side of the orbit, followed by a good deal of chemosis of the conjunctiva. The eye was quite blind, although there was no obvious lesion. Query, was this due to concussion of the optic nerve?

SCOTTISH MEDICAL SERVICE EMERGENCY COMMITTEE.—A meeting of this committee was held in the hall of the Royal College of Physicians of Edinburgh on Dec. 5th, when there were present the President of the Royal College of Physicians, the President of the Royal College of Surgeons, the President of the Royal Faculty of Physicians and Surgeons of Glasgow, the Deans of the Faculties of Medicine of Glasgow and Edinburgh Universities, and Dr. Ashley W. Mackintosh, representing the Dean of the Faculty of Medicine of Aberdeen University, Dr. J. C. McVail, Dr. J. R. Currie, Dr. J. Stevens, and Dr. Norman Walker (convener). The convener reported that there had been numerous applications to the committee for assistance in procuring locum tenents, and many offers of service from practitioners retired or temporarily unemployed. Though they had not been able to provide direct supply in all cases the influence of the committee had been of considerable value in promoting arrangements for the carrying on of the work of the men on service, while the recommendation of the committee that 5 guineas should be the maximum fee charged to men serving with the colours had apparently been loyally accepted. From several communications he had received it was evident that the financial arrangements between the men called out and their neighbours who were doing their work were not always satisfactory, and indeed in many cases no arrangements at all had been made. It was remitted to a subcommittee to consider whether it would be advisable to issue a series of model arrangements suitable to different varieties of practice which might help in averting difficulties that might arise, and to advise on any cases of immediate difficulty brought under the notice of the convener. It being evident that more men would before long be called out, the committee decided to make a fresh appeal for assistance to medical men and women who were in a position to help. A suggestion that the convener should address a meeting or meetings on the work of the committee was approved.

VACANCIES FOR MEDICAL OFFICERS.—We are asked to state that the reserve unit of the North Midland Mounted Brigade Field Ambulance is in urgent need of four medical officers. Applications should be made to the Officer Commanding Reserve Unit, North Midland Mounted Brigade Field Ambulance, Royal Army Medical Corps (T.F.), the Drill Hall, Nineveh-road, Handsworth, Birmingham. The pay as lieutenant is 14*s.* per diem, with 2*s.* for food allowance and 3*s.* for billeting expenses when necessary. £30 are allowed for uniform and £7 10*s.* for field equipment.

NURSING IN AUXILIARY HOSPITALS.—A resolution was carried unanimously at the annual meeting of the National Council of Trained Nurses of Great Britain and Ireland, held in London on Dec. 3rd, placing on record unqualified disapproval of the present organisation of the nursing of sick and wounded soldiers in military auxiliary hospitals at home and abroad. The Council, holding the opinion that the standard of nursing for the sick and wounded should be of the highest quality, earnestly petitions the Secretary of State for War, whose department is primarily responsible for the health and comfort of the troops, to prevent the expenditure of the munificent subscriptions of the public on inefficient nursing and the subjection of the sick and wounded to the dangerous interference of untrained and unskilled women, who have been placed in positions of responsibility for which they are not qualified, greatly to the detriment of the discipline in military auxiliary hospitals and the general welfare of the sick. The resolution has been sent to the Secretary of State for War.

THE BRITISH FIELD HOSPITAL FOR BELGIUM.—Since this hospital left Antwerp on the fall of that city it has been established at Furnes (between Dunkirk and Dixmude) under the immediate control of the Belgian Minister for War, and has been frequently visited by the Queen of the Belgians, who is its patron. The hospital is now under the direction of Mr. W. S. Perrin, until recently surgical registrar at the London Hospital, who is assisted by a staff of 7 surgeons and 22 trained nurses. A sum of £20,000 is needed for the efficient working of the hospital, which during the past month treated 1000 cases, and subscriptions are invited by the secretary, 21, Suffolk-street, Pall Mall, London, S.W.

EDINBURGH INDIANS' AMBULANCE CORPS.—The Edinburgh University Indian Field Ambulance Corps sent its second detachment on Dec. 6th from Princes-street station to New Hut Hospital, Brockenhurst. It comprised 13 subordinate officers: Corporals M. J. Khan and R. K. Syed; Lance-Corporals G. C. Sahgal and J. Lalthoo; and Cadets S. M. Dastgir, I. A. Shah, A. M. Ghosh, P. K. Ghosh, S. N. Seal, N. P. Singh, Y. Jan Kieam, G. Auditto, and B. P. Varma.

Sir Charles Ball and Sir Thomas Myles have been appointed consulting surgeons to the troops in Ireland, with the temporary rank of lieutenant-colonels in the Army Medical Service.

Sir James Mackenzie Davidson has lately been working upon an adaptation of the "telephone probe" which he devised 30 years ago for the localisation of metallic foreign bodies. The present modification is quite simple in use and has already been found of practical service at the time of operation, after the bullet or piece of shrapnel has previously been located by means of the X rays.

THE special exhibit of interesting objects and relics associated with naval and military surgery, nursing, and ambulance, which has been in course of arrangement at the Wellcome Historical Museum, 54A, Wigmore-street, London, W., will be on view from Monday next, Dec. 14th.

NEWTON ABBOT VOLUNTARY AID HOSPITAL.—The Newton Abbot (Devon) Voluntary Aid Hospital has been recently opened for the reception of patients, and now accommodates 45 wounded soldiers. The institution contains ten wards, operating room, X ray apparatus, &c. The hospital stands on an excellent site, and the grounds will be much appreciated by the patients. The medical staff consists of Dr. J. Culross, Mr. R. H. Grimbly, Dr. R. F. Higgin, and Dr. W. Patey.

Medical News.

UNIVERSITY OF OXFORD: DIPLOMA IN PUBLIC HEALTH.—The following have satisfied the examiners in the recent examination for the Diploma in Public Health (D.P.H.):—

Parts I. and II.—G. B. D. Adams.
Part I.—T. R. Bowen and A. E. A. Carver.
Part II.—F. S. Carson.

UNIVERSITY OF CAMBRIDGE.—The State Medicine Syndicate have appointed Dr. Henry Head, Trinity; Dr. Maurice Craig, Gonville and Caius; and Dr. W. H. R. Rivers, St. John's, to be members of the managing committee for the University Diploma in Psychological Medicine, to hold office for three years.—Dr. G. S. Graham-Smith has been appointed a member of the M.D. Degree Committee until Feb. 28th next in place of Dr. W. E. Dixon, who is now assessor to the Regius professor of physic.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee 28 cases were considered and grants amounting to £278 4*s.* voted to 26 of the applicants. An annuity of £20 was also made to one of the applicants. The following is a summary of the cases relieved:—

Daughter, aged 55, of M.R.C.S. Eng. who practised in Wiltshire and Devon. Late husband had been helped by the Fund, and on his death in June this year left his widow entirely unprovided for. Sister has helped her a little, but cannot continue to do so. One daughter, unable to help. Voted £12 in 12 instalments.—Widow, aged 69, of M.R.C.S.Eng. who practised in London, died in 1913, and left his widow totally unprovided for. Had commenced a boarding house, but was seized with aphasia and unable to carry it on. Made an annuitant of £20 and the Guild to try to get her into a home.—Widow, aged 65, of L.R.C.P. & S. Irel. who practised at Catford and Southend. Too old to work. Lives with a son and his family, who cannot afford to keep her. Has an Epsom pension. The case strongly recommended by the Guild visitor. Relieved twice, £18. Voted £12 in 12 instalments.—Daughter, aged 71, of M.D. Lond. who practised in North London. Unable to work owing to defective eyesight. Has recently obtained an annuity from another society. Proposes to apply for the Old Age Pension. Voted £2.—Widow, aged 51, of M.D. Edin. who practised at Newcastle-on-Tyne. Has C.M.B. certificate and earned a living by nursing, but fractured her leg some time since and is making very slow progress. A little help from a married daughter, but not enough to keep her. Voted £12 in 12 instalments.—Widow, aged 55, of M.D. Aberd. who died in 1904 and practised at Balham. Lost the little money left her by husband in assisting her only son, a mining engineer, in South Africa. The venture was a failure, and the son has joined the South African army. Qualified mental nurse, but finds difficulty in obtaining work on account of age. Voted £10 in two instalments and referred to the Guild.—Widow, aged 59, of L.S.A. Lond. who practised at Oldham and died in 1898. Youngest son, who has in the past entirely supported her, has joined the army, and up to the present has not had maintenance allowance. Two other children unable to assist. Voted £5 and recommended to apply to the Prince of Wales Fund.—Son, aged 18, of L.R.C.P. & S. Edin. who is also a recipient of the Fund. Assistance wanted for completion of education as a dentist. The case recommended by the Glasgow Branch of the Guild, and the current fees wanted £13 13*s.* The Guild undertook to provide £9 9*s.* and the Fund £4 4*s.*—Daughter, aged 55, of M.R.C S. Eng., who practised at Liverpool. Suffers from asthma and internal trouble and unable to work. Uncle pays rent, but otherwise no income. Previous relief five times, £56. Voted £12 in 12 instalments and referred to the Guild.—Widow, aged 59, of M.R.C.S. Eng. who practised at Liverpool. Has endeavoured to earn a living by nursing, but only earned £19 this year. Age makes it difficult to obtain patients. Relieved five times, £25. Voted £12 in 12 instalments and referred to the Guild.—Widow, aged 56, of L.R.C.P. & S. Edin. who practised at Grantown, and died in 1913 and was a recipient of the Fund. Five children, all at school. Endeavours to earn a living by taking in boarders, but cannot make sufficient to support the family. Relieved once, £12. Voted £12 in 12 instalments.—Daughter, aged 63, of F.R.C.S. Eng. who practised at Chester. Acts as housekeeper when able to obtain posts, but has been unsuccessful of late. Relieved twice, £12. Voted £10 in two instalments.—Widow, aged 77, of M.D. Lond. who practised in London. Suffers from rheumatic gout in hands and feet. Only income two small annuities. Relieved seven times, £35. Voted £10 in two instalments.—Daughter, aged 48, of M.R.C.S. who practised in India and London. Unable to work owing to nervous breakdown. Only income £23 per annum from investments. Relieved once, £5. Voted £5 in one instalment and referred to Guild to see if they can assist her to have her teeth attended to.—Daughters, ages 62 and 56, of M.R.C.S. Eng. who practised at Bexley Heath. They try to obtain a living by needlework, but so far this year have only earned £6 5*s.* Only other income £20 from a friend. Previous relief ten times, £154. Voted £20 in 12 instalments.—Widow, aged 67, of L.R.C.P. Edin. who practised at Cardiff. Health very bad. Only income £24 per annum from another charity. Previous relief nine times, £66. Voted £12 in 12 instalments.—Wife, aged 48, of M.R.C.S. who practised at Chesham, but deserted her in 1905. Three children, the youngest at Epsom and others at school. Health very unsatisfactory and eyesight defective. Only income about £24 per annum. Previous relief, £12. Voted £12, with leave to apply again and referred to Guild.—Widow, aged 56, of L.R.C.P. Edin. who practised at Langley. Endeavours to earn a living by taking in paying guests, but unsuccessful of late. Lives in own house, but it is mortgaged. Relieved four times, £40. Voted £10 in two instalments.—Daughters, ages 55 and 64, of an M.D. who practised in Cornwall. They both have poor health, but try to earn a living by taking in paying guests, but this year has been very bad. They live in own house. Relieved five times, £82. Voted £18 in 12 instalments.—Widow, aged 76, of M.R.C.S. Eng. who practised at Holderness. Health very bad. Has six children, 30 to 53, but they are unable to assist. Takes in lodgers when she can get them, but too old to do much. Relieved four times, £48. Voted £12 in 12 instalments.—Widow, aged 54, of L.S.A. Lond. who practised at Islington. Practically blind, and her youngest son, who practically supported her, has just joined the army. Her other son, married, unable to help. Relieved ten times, £64. Voted £18 in 12 instalments.—Daughter, aged 60, of L.S.A. Lond. who practised at Longton. Is suffering from spinal curvature and internal trouble. Only income £25 per annum and a little help from the Guild. Relieved 14 times, £152. Voted £18 in 12 instalments.—L.R.C.P. & S. Edin., aged 57, who practised at Old Kilpatrick. Suffering from spastic paralysis and unable to work. Lives with sister who keeps a boarding-house. One son, aged 18, whom the Fund and Guild are helping to educate as a dentist. Relieved ten times. £120. Voted £12 in 12 instalments.—Widow, aged 63, of M.R.C.S. Eng. who practised at Highgate. Has been ill some months and recently operated on for uterine fibroids, and suffers from rheumatism. Has earned a living by dressmaking. Relieved once, £12. Voted £12 in 12 instalments.—Daughter, aged 62, of L.R.C.P. & L.S.A. Lond. who practised at Brixton. Unable to earn own living owing to deafness and ill-health. Only income a little from sister. Relieved nine times, £104. Voted £12 in 12 instalments.—M.R.C.S. Eng., aged 80, who at one time practised at Great Yarmouth. Advanced age prevents him from working; has an Epsom pension and occasionally obtains an appointment as ship's surgeon. Relieved three times, £36. Voted £12 in 12 instalments.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, London, W.

Sir George Birdwood, K.C.I.E., M.D., the Anglo-Indian veteran, celebrated the eighty-second anniversary of his birthday on Tuesday last.

Irish Women's National Health Association.—The annual meeting of the Women's National Health Association was held last week in Dublin. Reports were made of the various activities in which the association has been engaged. It was stated that 1739 patients had been treated at Peamount Sanatorium in the two years of its existence and 229 at Rosslare.

Royal College of Physicians of Ireland.—At the last monthly meeting of the Royal College of Physicians of Ireland held on Dec. 4th a presentation was made to the College by Miss Gerrard of a portrait of Dr. Jonathan Osborne, who was President of the College in 1834-35, and was for several years one of the King's professors in the School of Physic. Dr. James Little, senior Fellow of the College, and one of the last surviving of Osborne's pupils, made the presentation on behalf of Miss Gerrard.

Royal College of Surgeons in Ireland. Students' Union.—The inaugural address to the Students' Union of the Royal College of Surgeons was given on Dec. 3rd by Mr. T. E. Gordon, F.R.C.S. Irel., who chose as his subject "The War." His lecture was chiefly directed to the members of the union who had joined or were about to join the colours. It was stated that already more than 400 alumni of the College were on service. An interesting discussion followed, in which the Lord Mayor of Dublin, General Friend, and Mr. Justice Barton took part.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Chetwood, T., M.B. Lond., D.P.H. Oxf., has been appointed Lecturer on Hygiene in the Training Department of the University of Sheffield.

Dillon, Frederick, M.B., Ch.B. Edin., has been appointed Clinical Assistant at the West End Hospital for Diseases of the Nervous System.

Donelan, James, M.B. R.U.I., M.Ch., has been appointed Official Medical Referee to the Comité de Londres of the Croix Rouge Française.

Field, O., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Battersea District of the county of London.

Gilliland, Hans, M.B. Edin., has been appointed Medical Superintendent of the Whiteabbey Sanatorium, Belfast.

MacAdam, William, M.D., B.Sc. Glasg., D.P.H. Camb., has been appointed Demonstrator in Public Health in the University of Sheffield.

Shoolbread, Thomas B., M.B., C.M. Edin., has been appointed Resident Medical Officer to the Dispensary, Carlisle.

Verrall, P. Jenner, M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Medical Officer to Epsom College.

Vacancies.

***For** further information regarding each vacancy reference should be made to the advertisement (see Index).*

Barnsley, Beckett Hospital and Dispensary.—Second House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and laundry.

Barnstaple, North Devon Infirmary.—House Surgeon. Salary £100 per annum, with board and laundry.

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

Birkenhead Borough Hospital.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birmingham City Mental Hospital, Rubery-hill.—Female Junior Assistant Medical Officer. Salary £200 per annum, with apartments, board, laundry, &c.

Birmingham General Dispensary.—Resident Medical Officer, unmarried. Salary £240 per annum, with apartments, fire, lights, and attendance.

Birmingham and Midland Eye Hospital, Church-street.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

Birmingham, Little Bromwich Fever Hospital.—Assistant Resident Medical Officer. Salary £200 per annum, with board and residence.

Birmingham Union.—Dudley-road Infirmary: Second Assistant Medical Officer. Salary at rate of £210 per annum. Third Assistant Medical Officer. Salary at rate of £170 per annum. Fourth Assistant Medical Officer. Salary at rate of £160 per annum. Selly Oak Infirmary: Assistant Medical Officer. Salary at rate of £180 per annum. All with apartments, rations, laundry, and attendance.

Bradford Royal Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

Bradford. St. Luke's Hospital and Union House.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with rations, apartments, and washing.

Brentwood Union Infirmary and Schools, Warkworth House, Isleworth, W.—Second Assistant Medical Superintendent, &c., unmarried. Salary £200 per annum.

Burley-in-Wharfedale, Scalebor Park Asylum.—Assistant Medical Officer. Salary £250 per annum, with rooms, board, attendance, and washing. Or Locum Tenens for winter months. Salary £5 5*s*. per week.

Bury and District Joint Hospital Board.—Assistant to Medical Superintendent. Salary £200 per annum, with board, washing, and lodging.

Bury County Borough.—Temporary Assistant to Medical Officer of Health. Salary at rate of £350 per annum.

Canterbury, Kent and Canterbury Hospital.—Senior House Surgeon and Junior House Surgeon, unmarried. Salaries £100 and £90 per annum respectively, with board, lodging, and washing.

Canterbury, Kent County Asylum.—Third Junior Assistant Medical Officer. Salary £250 per annum, with quarters, board, washing, &c.

Cardiff, King Edward VII.'s Hospital.—House Surgeons for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

Cardiff, King Edward VII. Welsh National Memorial Association.—Assistant Resident Medical Officers at Sanatoria. Salary £150 per annum and maintenance.

Chichester, West Sussex County Mental Hospital.—Second Assistant Medical Officer. Salary £250 per annum, with apartments, board, laundry, and attendance.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing. Also Physician to Out-patients.

City of Westminster Union Infirmary, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

Clifton, York, North Riding Asylum.—Locum Tenens Medical Officer. Salary £250 per annum, with apartments, board, &c.

Dartford, Kent, Darenth Industrial Colony for the Feeble-minded.—Third Assistant Medical Officer, unmarried. Salary at rate of £250 per annum, with board, lodging, and washing.

Dorset County Council.—Assistant County Medical Officer of Health. Salary at rate of £250 per annum.

Dudley, Guest Hospital.—Assistant House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

Dumfries and Galloway Royal Infirmary.—Assistant House Surgeon. Salary £65 per annum, with board and washing.

Durham, Sherburn Hospital.—Medical Officer. Salary £300 per annum and house.

East Wilts United Districts.—Medical Officer of Health and Assistant School Medical Officer. Salary £450 per annum.

Evelina Hospital for Sick Children, Southwark, S.E.—Honorary Dental Surgeon. Also Ten Qualified Clinical Assistants in Out-patient Departments.

Falkland Islands.—Assistant Colonial Surgeon. Salary £400 per annum.

Fife District Asylum, Cupar.—Senior Assistant Medical Officer. Salary £170 per annum, with rooms, board, and attendance.

Gainsborough Urban District Council.—Medical Officer of Health. Salary at rate of £100 per annum.

Gloucester, Gloucestershire Royal Infirmary and Eye Institution.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

Great Northern Central Hospital, Holloway-road, N.—Resident Medical Officer. Salary £120 per annum, with board, residence, and laundry.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £200 per annum, with board, lodging, and washing.

Huddersfield, Storthes Hall Asylum, Kirkburton.—Assistant Medical Officer. Salary £250 per annum, with rooms, board, attendance, and washing.

Jharia Mining Settlement, Bihar, India.—Chief Sanitary Officer. Salary Rs.1200 (£80), rising to Rs. 1500 (£100) a month, with house.

Kensington and Fulham General Hospital, Earl's Court, S.W.—Dental Surgeon.

Leeds Public Dispensary.—Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

Liverpool, Brownlow Hill Institution.—Resident Assistant Medical Officer. Salary £200 per annum, with apartments and usual resident allowances.

Liverpool Infectious Diseases Hospital.—Locum Tenens Resident Medical Officer. Salary 5 guineas per week, with board, washing, and lodging.

Liverpool, Mill-road Infirmary.—Temporary Resident Medical Officer. Salary 5 guineas per week.

Liverpool, Royal Southern Hospital.—House Surgeon for six months. Salary at rate of £60 per annum, with board and residence.

London Hospital.—Surgeon.

London Lock Hospital, Harrow-road, W.—House Surgeon at Female Hospital. Salary at rate of £130 per annum, with rooms, board, and washing.

Maidstone, Kent County Asylum.—Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, quarters, attendance, washing, &c.

Manchester, Ancoats Hospital, Mill-street.—Resident House Physician. Salary £130 per annum, with board and apartments.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester Royal Eye Hospital.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

Metropolitan Hospital, Kingsland-road, N.E.—Two Assistant House Surgeons. Salary at rate of £40 per annum, with full board and washing.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Senior House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

Morpeth Dispensary.—House Surgeon, unmarried. Salary £120 per annum, with rooms, coal, gas, and attendance.

Much Wenlock, King Edward VII. Memorial Sanatorium, Shirlett.—Resident Medical Superintendent. Salary £300 per annum and all found.

Newcastle-upon-Tyne. Royal Victoria Infirmary.—Anæsthetist.

New Hospital for Women, Euston-road.—Assistant Obstetrician (female).

Newport (Mon.), Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

Northamptonshire County Council.—Assistant School Medical Officer. Salary £25 per month.

Northampton General Hospital.—House Surgeon. Salary £120 per annum, with apartments, board, washing, and attendance.

Nottingham General Hospital.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

Nottingham, Ransom Sanatorium, Sherwood Forest, Mansfield.—Resident Medical Officer. Salary £200 per annum, with board, residence, and laundry.

Notts County Council.—Tuberculosis Officer. Salary £450 per annum.

Preston Royal Infirmary.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W.—District Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

Royal Hospital for Diseases of the Chest, City-road, E.C.—House Physician for six months. Salary at rate of £75 per annum, with board, lodging, and washing.

Royal Waterloo Hospital for Children and Women, S.E.—Resident Medical Officer. Salary at rate of £150 per annum, with board and washing.

St. Mary's Hospital for Women and Children, Plaistow, E.—Resident Medical Officer. Salary at rate of £90 per annum, with board, residence, and laundry.

Salford Fever Hospital.—Junior Resident Medical Officer.

Salford Royal Hospital.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

Salisbury Infirmary.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

Scarborough Hospital and Dispensary.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

Sheffield Royal Hospital.—Assistant House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

Sheffield Royal Infirmary.—House Surgeon. Salary £100 per annum, with board and residence.

Southend-on-Sea County Borough.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary at rate of £300 per annum.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

Sunderland Royal Infirmary.—Senior Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

Swansea General and Eye Hospital.—House Surgeon. Salary £125 per annum, with board, washing, and attendance.

Taunton, Somerset and Bath Asylum, Cotford.—Assistant Medical Officer. Salary £250 per annum, with apartments, board, washing, attendance, &c.

Taunton, Taunton and Somerset Hospital.—Senior House Surgeon. Salary £120 per annum, with board, lodging, and laundry.

Trinidad Lunatic Asylum.—Assistant Medical Superintendent. Salary £250 per annum, £80 ration allowance, bachelor's quarters.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

Tunbridge Wells General Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, &c.

University of London.—Examiners.

Wakefield, Clayton Hospital.—Senior House Surgeon. Salary £160 per annum, with board, lodging, and laundry.

Walsall and District Hospital.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

Warrington County Borough.—Temporary Assistant Medical Officer of Health. Salary £250 per annum.

Warrington Infirmary and Dispensary.—Senior House Surgeon. Salary at rate of £200 per annum, with board, apartments, and laundry.

West Bromwich and District Hospital.—House Surgeon and Assistant House Surgeon. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

West End Hospital for Diseases of the Nervous System, Paralysis, and Epilepsy, 73, Welbeck-street, W.—Resident House Physician for six months. Salary at rate of £100 per annum. Also Honorary Anæsthetist.

West Ham County Borough.—Assistant School Medical Officer. Salary £300 per annum.

West Ham Union.—Infirmary, Whipps Cross-road, Leytonstone, N.E.: Second Assistant Resident Medical Officer. Salary £250 per annum, with usual residential allowances. Sick Home, 95, Forest-lane, Forest Gate, E.: Deputy Medical Officer. Salary £250 per annum, with usual residential allowances.

West Riding County Council.—School Medical Inspector. Salary £325 per annum.

Westminster Hospital, Broad Sanctuary, S.W.—House Surgeon for six months, with board and lodging.

Wilts County Council General Education Committee.—Temporary Assistant School Medical Inspector. Salary at rate of £300 per annum, with travelling and maintenance allowances.

Worcester General Infirmary.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

York County Hospital.—House Physician for six months. Salary at rate of £150 per annum, with board, residence, and washing.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Shildon, in the county of Durham; at Crowle, in the county of Lincoln; and at Tobermory, in the county of Argyll.

Births, Marriages, and Deaths.

BIRTHS.

Binns.—On Dec. 2nd, at Humberstone-road, Leicester, the wife of C. C. H. Binns, M.A., M.B., of a daughter.

Johnston.—On Dec. 1st, at Bangalore, India, the wife of Lieutenant-Colonel C. A. Johnston, I.M.S., of a son.

Loughborough.—On Nov. 29th, at Pretoria, South Africa, the wife of A. L. Loughborough, M.R.C.S., L.R.C.P., of a daughter.

McSheehy.—On Nov. 22nd, at Wimbledon, the wife of Captain O. W. McSheehy, R.A.M.C., of a daughter.

Ogilvy.—On Dec. 2nd, at Long Grove House, Epsom, the wife of David Ogilvy, M.D., of a daughter.

Parks.—On Dec. 1st, at Hawthorn Lodge, Walton-on-Thames, the wife of Norris J. Parks, L.D.S., of a daughter.

Smith.—On Dec. 3rd, 1914, at the Red House, Virginia Water, the wife of G. W. Smith, M.B., Ch.B., temporary Lieutenant, R.A.M.C., of a son.

MARRIAGES.

Brewerton—Tindall.—On Nov. 28th, at Christ Church, Brondesbury, N.W., Wright Brewerton, F.R.C.S., to Olive, youngest daughter of the late A. McIvor Tindall, M.R.C.S., and of Mrs. Tindall, of Market Harborough.

Skinner—Beney.—On Dec. 2nd, at Hong-Kong, Alexander Hugh Skinner, M.D., to Winifred Mary, second daughter of W. A. Beney, J.P., of Beckenham.

DEATHS.

Hilliard.—On Dec. 6th, Henry Charles Hilliard, M.D. Lond., of White Hill, Bletchingley, Surrey, in his 71st year.

Morton.—On Dec. 1st, suddenly, Albert S. Morton, M.D., M.R.C.S., of 63, Mexfield-road, East Putney.

Scott.—On Dec. 1st, at St. Aubyns, Hove, Edwin Irwin Scott, M.D., in his 68th year.

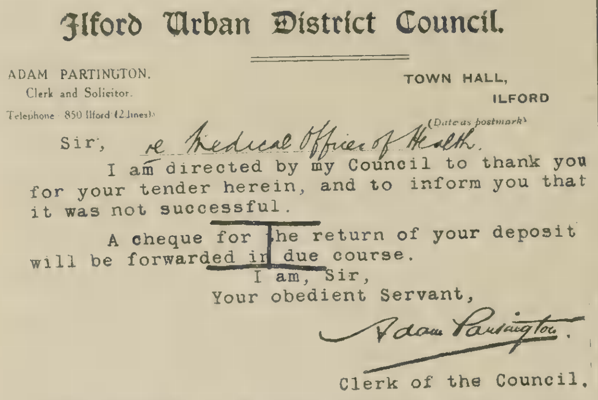
Taylor.—On Dec. 2nd, at Kennington Park-road, S.E., Herbert Taylor, M.B. Lond., aged 64 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

OFFICIAL MANNERS.

OUR readers may remember the circumstances in which the Ilford urban district council, after many endeavours, succeeded at last in getting rid of its medical officer of health; we referred to the matter on several occasions and expressed our opinion of this local authority's attitude and behaviour. A correspondent now sends us the postcard, which we reproduce below in facsimile, omitting only the name of the medical man to whom it was addressed. Our correspondent explains that this postcard sent through the ordinary post with a halfpenny stamp was the only acknowledgment made by the Ilford urban district council of an application for the vacant medical officership of health.



Ilford Urban District Council.

ADAM PARTINGTON.
Clerk and Solicitor.
Telephone 850 Ilford (2 lines).

TOWN HALL,
ILFORD

(Date as postmark)

Sir, re Medical Officer of Health.

I am directed by my Council to thank you for your tender herein, and to inform you that it was not successful.

A cheque for the return of your deposit will be forwarded in due course.

I am, Sir,
Your obedient Servant,
Adam Partington.
Clerk of the Council.

At the request of the council the candidate had sent to a list of councillors provided for that purpose some 25 printed copies of his application for the post, costing him upwards of £2. It will be noted that the card (which is printed in imitation typewritten characters with a facsimile signature) is really a form of rejection of a tradesman's tender for supplies, which has very crudely been made do duty in another capacity. Apart altogether from the question of taste, the receipt of such a card through the open post might conceivably be most embarrassing to an unsuccessful candidate. Nevertheless, as our correspondent hastens to add, his own personal feeling is one of relief at not being appointed to serve a body which exhibits such methods of economy.

VIRCHOW AND THE WAR.

To the Editor of THE LANCET.

SIR,—Nearly 20 years ago the following paragraph was published in an annual widely read by the French people. It would be interesting to see how far Virchow's prognostications will come true in the present upheaval.

"Désarmer ou périr : tel est, pour les nations européennes, le terrible dilemme qui s'impose aujourd'hui.

"Les armements poussés sans trêve ni repos, c'est le microbe de la guerre semé à pleines mains et sans discontinuité. Car plus le voisin voit le voisin armer, plus il se croit dans l'obligation d'armer lui-même. Et cette course effrénée au clocher des armements (c'est: au clocher de la mort qu'il faudrait dire) continuera ainsi jusqu'à l'exténuation, jusqu'à l'épuisement des forces, jusqu'à l'extinction de la vie. Je me trompe. Lorsque les gouvernements verront la vacuité effroyable de leurs coffres-forts, et qu'ils se rendront compte de l'impossibilité de pouvoir les remplir à l'aide de nouveaux impôts—toutes les ressources étant taries et la capacité impositive de leurs pays respectifs réduite à néant—ils se précipiteront à corps perdu dans la guerre, avec l'espoir de sortir enfin d'une situation sans issue.—Dr. Virchow."

I am, Sir, yours faithfully,
London, Dec. 8th, 1914. A. S. F.

POCKET HEATERS.

To the Editor of THE LANCET.

SIR,—I read last week that the latest German recruits had been supplied with pocket electric radiators for warming purposes, but I understand that such an apparatus would require constant recharging, the facilities for which would often be impossible to obtain in the fighting line. A day or two ago I read in an article in a lay paper that a retired Russian colonel had recommended a pocket heater used by the Russian troops. I see it is now advertised under the name of the Kyron heat-giver. A few years ago the "Instra" pocket warmer, which was practically on the same principle, was introduced into this country. The stick of fuel in these heaters is apparently some kind of carbon wrapped in paper. These pocket radiators are of Japanese origin, and I first saw them about 25 years ago, when they consisted of a most gaudy highly-coloured box for the pocket or muff, and they then attracted attention as a curious novelty from the Far East; they were looked upon more or less as an ingenious toy, but they have since been improved. A thick slab of glass heated up makes a clean heater and retains heat well, although it is not easy to get a slab which will stand the heat without cracking after a time. A small solid cube of steel heated on the fire-bars and dropped into a small tobacco or mustard tin will make a heater sometimes too hot to hold and will last an hour. It is on the principle of the Russian tea-urn or "samovar," where the red-hot block of metal or carbon is dropped into the middle of the tea-urn in a compartment made for it.

I am, Sir, yours faithfully,
London, Dec. 8th, 1914. X. Y. Z.

INSURANCE ACT PRESCRIBING.

THE Forfarshire Local Medical, Panel, and Pharmaceutical Committees have issued a useful little pamphlet entitled "Official Rules for Prescribing and Formulary," which is marked "For private circulation only," and yet is priced at 1*s*. The rules, which appear to have been drafted in consequence of the great increase in the drug bill for the area, have been devised to check excessive or reckless prescribing as a result of a complete scrutiny of all the Insurance Act prescriptions during three months. From this it was found that a considerable portion of the charges upon the drug fund could have been avoided without loss of efficiency and even with advantage to insured patients by properly directed economy in prescribing. Particular points worthy of notice in these rules are a total prohibition of patent or secret medicines, and the use of corresponding official drugs and preparations in place of proprietary articles where possible. A list of such corresponding drugs and official formulæ for proprietary articles is appended, as well as a stock preparation pharmacopœia of the usual hospital type.

THE CHILDREN'S DINNER FUND.

A BAZAAR in aid of the Children's Dinner Fund, promoted by the London Vegetarian Association, will be opened at the Memorial Hall, Farringdon-street, E.C., to-day, Saturday, Dec. 12th, at 3 P.M., by Mrs. Despard. There will be an exhibition of food, and cookery demonstrations will be made, including the use of the Hay box or fireless cooker.

THE AFTER-CARE ASSOCIATION.

THE After-Care Association for Poor Persons Discharged Recovered from Asylums for the Insane earnestly appeals for funds to carry on and extend its work. The association, which is the only one of its kind in the United Kingdom, assists cases in all parts of the country in various ways. Secretary: Mr. H. Thornhill Roxby, Church House, Westminster, S.W.

UP-TO-DATE SPELLING.

FROM a second-hand bookseller's catalogue: "...... This work is an extremely rare one, and it is upon it that the present translation is based; considerable alterations and (it is hoped) improvements have however been made, and *antiquated authography* has been corrected."

HELICON.

WE have received from the Castle Laboratory, Jeffreys-place, London, N.W., a sample of Helicon tablets, each containing 5 grains of pure acetyl-salicylic acid. It is, we are told, "entirely British manufactured," and conforms, we find, with the standards of purity laid down in the British Pharmacopœia, 1914.

◆

C. T.—Our correspondent will find the following references in THE LANCET to the use of iodine for wounds in war time. August 17th, 1912 (p. 463), abstract of a paper read in the Navy, Army, and Ambulance Section of the British Medical Association meeting on The More General Use of Iodine in First-Aid Treatment of Accidental Wounds. Clinical Note, by Mr. Edmund Owen, F.R.C.S., in THE LANCET of Oct. 11th, 1913 (p. 1063), on Tincture of Iodine as a Household Remedy for Wounds and Skin Surface Cleaning. Letter in THE LANCET of Jan. 3rd, 1914 (p. 75), on Iodine in the Dressing of Wounds (Experiences in the Balkan War).

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

WEDNESDAY.

SECTION OF THE HISTORY OF MEDICINE (Hon. Secretaries—Raymond Crawfurd, Leonard G. Guthrie): at 5 P.M.

Papers :

Dr. George Peachey: A Seventeenth Century Medical Superstition.

Mr. C. J. S. Thompson: The Apothecary in England from the Fourteenth to the Sixteenth Century.

THURSDAY.

SECTION OF DERMATOLOGY (Hon. Secretaries—S. E. Dore, A. M. H. Gray): at 5 P.M.

Exhibition of Cases (at 4.30 P.M.):

Dr. Knowsley Sibley: Case of Angiokeratoma.

Other cases will be shown.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—8 P.M., Paper:—Mr. J. E. Barnard: X Rays in Relation to Microscopy.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8.30 P.M., Paper:—Dr. A. Balfour: Tropical Problems in the New World (illustrated by slides).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

TUESDAY.—5 P.M., Bradshaw Lecture:—Sir Frederic Eve: Acute Hæmorrhagic Pancreatitis, with Remarks on the Etiology of Chronic Pancreatitis.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. [illegible] P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. [illegible] P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. [illegible] P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 9th, 1914.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec.	3	29·720	WSW	...	73	51	44	44	45	Cloudy
,,	[illegible]	29·666	S.W.	0·19	59	52	45	47	50	Overcast
,,	5	29·446	S.W.	...	74	45	39	37	39	Cloudy
,,	6	29·690	S.	0·08	56	56	35	36	37	Cloudy
,,	7	29·364	S.W.	0·09	59	54	37	48	51	Overcast
[illegible]	8	29·560	S.W.	...	73	53	47	46	48	Cloudy
,,	9	29·580	S.	[illegible]	50	49	46	47	48	Overcast

The following magazines, journals, &c., have been received:— British Dental Journal, Journal of State Medicine, Archives of Roentgen Ray, Transactions of the Society of Tropical Medicine and Hygiene, Interstate Medical Journal, Indian Medical Record, Cornell University Medical Bulletin, Public Health, Polyclinic, &c.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Mr. R. J. Albery, Lond.; Mr. Félix Alcan, Paris; Mr. W. L. Allott, Hoyland Nether; American Women's War Relief Fund, Lond., Secretary of; Messrs. A. Anderson, York; Admiralty Medical Department, Lond., Director-General of; Mr. E. Arnold, Lond.; Anglo-American Pharmaceutical Co., Croydon; Dr. J. Mitford Atkins, Lond.; Anglo Russian Translation Bureau, Lond.

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Q.—Queensland, Commissioner of Public Health for, Brisbane.

R.—Royal Microscopical Society, Lond., Secretaries of; Royal Institution, Lond.; Royal Society, Lond.; Mr. W. C. Rivers, Lond.; Royal National Hospital for Consumption for Ireland, Newcastle, Co. Wicklow, Secretary of; Royal Hospital for Diseases of the Chest, Lond., Secretary of; Rover Co., Coventry; Royal Surgical Aid Society, Lond., Secretary of; Royal College of Surgeons of England, Lond., President and Council of; Registrar-General for Scotland, Edinburgh; Mrs. A. Richardson, Lond.; Royal Academy of Medicine in Ireland, Dublin; Messrs. Robertson and Scott, Edinburgh; Royal Victoria Infirmary, Newcastle-on-Tyne, Secretary of.

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U.—University of London, Principal of; University of Sheffield, Registrar of.

V.—Messrs. Van Houten, Lond.; Mr. H. M. Vyall, Lond.

W.—West London Medico-Chirurgical Society, Secretary of; West Riding County Council, Wakefield, Clerk to the; Whiting, Ltd., Lond.; West London Hospital Post-Graduate College, Dean of; Dr. S. A. K. Wilson, Lond.; Welsbach Light Co., Lond.; West Riding Asylum, Scalebor Park, Clerk to the; Western Mail, Ltd., Cardiff; Wilts County Council, Trowbridge, Secretary of; Dr. F. J. Waldo, Lond.; W. S. S.; Mr. D. M. Watson, Dublin; Mr. W. J. Woolcock, Lond.; Dr. Hugh Woods, Lond.; Mr. G. Wyatt, Cheltenham; Mrs. I. Weigall, Washford; Dr. P. Watson-Williams, Clifton; Mr. F. W. Widdowson, Sutton; Mr. A. M. Webber, Nottingham; Fleet-Surgeon E. C. Ward, R.N., Portsmouth.

Y.—York County Hospital, Secretary of.

Z.—Messrs. C. Zimmermann and Co., Lond.

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C.—Mr. J. E. Chalmers, Grosmont; Dr. G. H. Culverwell, Reading; Dr. I. D. Chepmell, Worthing; Mr. R. Coffey, Chatteris; Sir John Collie, Lond.; Crichton Royal Mental Hospital, Dumfries, Physician-Superintendent of; Dr. Frank Clifford, Swansea; Messrs. T. Christy and Co., Lond.; Mr. F. S. Cooper, Lond.; Dr. J. C. Connell, Kingston, Ontario; Mr. E. Clark-Jones, Lond.

D.—Miss H. M. Davis, Bristol; Mr. W. J. Dredge, Lond.; Messrs. Darley, Cumberland, and Co., Lond.; Durham County Council Education Committee, Durham, Secretary of.

E.—Messrs. W. Edwards and Son, Lond.; Mr. E. Evans, Felinfach; Messrs. Evans, Sons, Lescher, and Webb, Lond.

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H.—Dr. E. Hawkins, Birmingham; Dr. A. J. Hosterlow, Negapatam; Mr. F. Hargreaves, Manchester; Mr. P. Harper, Lond.; Messrs. Hutchison and Dow, Glasgow; H. P.; H. H. F.; Colonel M. P. Holt, R.A.M.C., Farnham; Messrs. C. Hearson and Co., Lond.; Messrs. Henderson and Son, St. Andrews; Dr. W. R. Honeyburne, Saltburn-by-the-Sea; Herefordshire General Hospital, Hereford, Secretary of.

J.—Jenner Institute for Calf Lymph, Lond.; Dr. R. P. Jones, Prudhoe.

K.—Dr. A. F. A. King, Washington; Dr. K. M. Khoury, Wad Mepani.

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M.—Mr. S. Mastin, Beckenham; Mr. J. H. Marsh, Macclesfield; Messrs. Marshall, Gibbon, and Co., Manchsster; Mr. A. McCormick, Newton Stewart; Messrs. McDougall Brothers, Manchester; M. C.; Messrs. Meister, Lucius, and Brüning, Lond.; Dr. A. W. Mackay, Inverness; Dr. D. L. McCullough, Chagford; Dr. W. L. MacCormac, Lond.; Fleet-Surgeon G. E. Macleod, R.N., Lond.

N.—Nottingham Guardians, Clerk to the; North Devon Infirmary, Barnstaple, Secretary of.

O.—Mr. A. B. C. Orchard, Darlington; Outlook Co., New York.

P.—Mr. F. E. Potter, Lond.; Messrs. W. Porteous and Co., Glasgow; Pharmaceutical Society of Great Britain, Lond., Secretary of; Messrs. Philip, Son, and Nephew, Liverpool.

R.—Dr. S. Rangachary, Tanjore; Mr. H. M. Riley, Leicester; Royal Waterloo Hospital for Women, &c., Lond., Secretary of.

S.—Dr. F. W. Saunders, Lond.; Miss S. Smith, Virginia Water; South Shields Corporation, Clerk to the; Dr. D. Sen, Midnapur; Mr. E. Simpson, Epperstone; Mr. F. Smith, Bury St. Edmunds; Dr. T. B. Shoolbread, Carlisle; Messrs. Spiers and Pond, Lond.; Stepney Tuberculosis Dispensary, Lond., Secretary of; Miss N. Smyth, Lond.; Mr. W. Savage, Burslem; Mr. J. Smith, Lond.; Messrs. W. H. Smith and Son, Lond.; Sports Club, Lond., Secretary of; Messrs. W. H. Smith and Son, Manchester; Dr. F. B. Smith, Manchester; Dr. C. P. A. Stranaghan, North Berwick; Mr. F. W. Strugnell, Lond.

T.—Trinity College, Dublin, School of Physic, Secretary of; T. E. V.

V.—Mrs. Veitch, Edinburgh.

W.—Mr. R. Williams, Bangor; Mr. A. Wilson, Lond.; Messrs. A. J. Wilson and Co., Lond.; Mr. Beckwith Whitehouse, Birmingham; Messrs. Williams and Son, Bradford.

The Croonian Lectures

ON

MODERN ASPECTS OF CERTAIN PROBLEMS IN THE PATHOLOGY OF MENTAL DISORDERS.

Delivered before the Royal College of Physicians of London,

BY EDWIN GOODALL, M.D. LOND., B.S., F.R.C.P. LOND.,
MEDICAL SUPERINTENDENT, CITY OF CARDIFF MENTAL HOSPITAL.

LECTURE III.[*]

SIR THOMAS BARLOW AND GENTLEMEN,—Continuing my observations upon leucocytal counts in the psychoses which, by reason of their clinical manifestations, afford ground for inquiry as to a possible toxic origin, I submit to you eight records of quantitative and qualitative counts in cases of dementia paralytica.

Variations of Leucocytal Count in Dementia Paralytica.

In each case these cover a considerable period of time. I would here express my obligations to my colleague, Dr. D. L. Jackson, formerly assistant physician at the Cardiff Mental Hospital, for valuable assistance in carrying out these counts, as well as those which I presented at my last lecture. The object of these observations was more particularly to ascertain whether the qualitative leucocytal count in a remission of the disease, or in a period of obvious quiescence, differed from that observed in the active phases or at times of exacerbation. The cases I have selected comprise the best material at my disposal during the past three years; they include only one in which a remission of the disease was so pronounced and established that the patient was able to return home for a period. From my experience I should say that a remission of this kind is extremely rare amongst the rate-supported classes, and I therefore trust that some of my colleagues whose work lies amongst patients in registered hospitals or private asylums may be able to repeat and amplify these observations. Copies of my records are before you, and I need only refer briefly to the cases.

[Here the lecturer pointed out the variations in the qualitative cell counts, associated with clinical variations, as illustrated in the records of which the following (Table XI.) are a few.]

In addition to illustrating the point that an absolute and relative lymphocytosis is present in states of remission and of marked quiescence in dementia paralytica, to be replaced by polynucleosis on the occurrence of exacerbations (such as seizures, febrile states of unknown causation), the accompanying records show that the total count does not regularly vary with variations in the clinical condition, although it usually does, and that the total count is moderately high during remissions and states of quiescence. The variations that take place in the leucocytal count, with clinical variations, are rather qualitative than quantitative. Further, it appears that eosinophiles are either absent or in an extremely low proportion in these cases at all times except during remission, and even then the proportion is low. This remark applies to all the cases illustrative of different kinds of insanity of which I showed charts at my last lecture.

Summary of Observations on the Leucocytal Count.

If, now, I may extract summarily the salient points of the observations of many workers, several of whom I have quoted from, upon the leucocytal count in the psychoses which are *primâ facie* toxic in origin, I think the evidence furnished (leucocytosis, neutrophile increase) is in favour of toxæmia, not a grave toxæmia; this accords with the general clinical evidence. There is also evidence of a lymphocytal reaction in dementia paralytica, broken by a neutrophile predominance with exacerbations. We know that in various diseases of parasitic origin, such as typhoid fever, secondary and tertiary syphilis, trypanosomiasis, and others presumably parasitic, such as measles, mumps, there is a lymphocytosis; and there seems ground for the belief that this form of white cell reaction, and for the same reason (parasitic causation), is characteristic of dementia paralytica also. If in "florid" states, and in states of exacerbation of various kinds, the predominant reaction is neutrophile, that may be merely because "intercurrent" non-specific toxic agencies are operative. According to this argument such states and such reaction are superimposed merely. This hæmatological observation in respect of the prevalence of lymphocytes in dementia paralytica is a corroboration of a similar one referred to in an address I delivered in Birmingham in 1911,[1] and constitutes clinical evidence, as far as it goes, of the presence of a parasite such as the treponema. Our present information points to an absolute and relative lymphocytosis not of a pronounced kind, as the characteristic condition in the states grouped under the head of "dementia præcox," after the initial stages have passed, and in subacute and chronic mania and melancholia. The significance of this is obscure.

FERMENTS AND ANTIFERMENTS.

During 1913 a considerable amount of work has been carried on in Germany in the domain of psychiatry with the methods introduced by Abderhalden to demonstrate the presence of specific ferments in the blood serum. Fauser[2] was probably the first to apply these tests in mental disorders, and his results have been in the main confirmed by subsequent observers. The evidence is now appreciable to the effect that in dementia præcox breakdown products of the protein of the cerebral cortex and of the genital glands, in dementia paralytica of the cortex and of some other organs, are present in the circulation and give rise to protective ferments which are demonstrated by Abderhalden's methods; whereas in the psychoses known as "functional" and "constitutional" (e.g., manic-depressive insanity, paranoia) no ferments are present. For the present the main interest attaching to these observations consists in the encouragement they afford us in our attempts to diagnose between the dementia præcox group with its practically hopeless prognosis on the one hand, and confusional states and mania and melancholia on the other. In this connexion it has to be noted that anti-proteolytic substances—substances which interfere with tryptic digestion—are also found in increased amount in the serum of cases of the "organic" as distinguished from the "functional" and "constitutional" psychoses.

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[*] Lectures I. and II. were published in THE LANCET of Dec. 5th (p. 1287) and 12th (p. 1341), 1914, respectively.

TABLE XI.—*Differential Leucocyte Count in Percentages on 400 Consecutive Leucocytes.*

General paralytics in remission.	Date of admission.	Date of examination.	Leucocytes per c.mm. Average of 3 counts of 400 each	Polymorphs.	Small lymphocytes.	Large lymphocytes.	Eosinophiles.	Basinophiles.	Remarks.
W. T. M.	12/5/10	7/3/11	—	61·4	17·8	18·5	2·0	—	In remission, but not pronounced.
		5/7/11	9,000	51·75	32·25	15·50	0·50	0·25	Same state.
		17/7/11	17,400	86·5	11·0	2·5	—	—	Shortly after minor seizure with rise of temperature.
		28/6/13	11,400	76·50	17·50	5·00	0·00	1·00	In seizures.
		15/9/13	11,400	72·50	19·00	8·00	0·50	0·00	Seizures previous day.
		22/9/13	12,000	65·50	26·50	7·50	0·50	0·00	Confined to bed; faulty habits. Going steadily down. Died 11/1/14.
S. J. C. K.	2/1/11	23/3/11	15,484	55·0	23·75	17·00	4·0	0·25	Remission.
		25/5/11	—	41·7	20·25	30·50	5 75	1·75	,,
		3/2/12	8,400	74·75	16·25	8·00	1·50	—	1 week after seizure.
		24/10/12	13,900	70·75	10·75	15·50	2·50	0·50	In relapse; has been so some weeks; demented; restless.
		11/1/13	11,200	60·25	30·00	8·50	1·75	0·00	Partial remission; works in ward.
		24/6/13	9,300	85·00	9·00	4·50	0·00	1·50	Confused; temperature 101° without cause.
M. D.	10/2/11	1/8/11	13,520	—	—	—	—	—	Very ill mind and body. Florid state. On 11/2/11 and 14/2/11 w.b.c. = 19,950 and 23,000. Had very acute cellulitis of right arm April, 1911; healed May. Latter part July and August in remission, especially physically. Working; clean. Began to improve mentally in August, 1911. Remission. Discharged November, 1911.
		7/8/11	9,400	59·5	27·25	11·50	1·75	—	
		17/8/11	—	46·75	43·75	5·80	2·0	1·25	
		21/11/11	—	56·50	25·00	16·00	2·50	—	
		The marked remission was due to the intercurrent disease (cellulitis).							
	Re-admitted 24/10/12	25/10/12	10,100	75·0	13·50	10·25	0·50	0·50	Readmitted in mania of G.P.I.; noisy, turbulent, very exalted, destructive.
			10,800	53·50	35·50	11·0	0·5	0·00	In remission; gaining weight.
		28/2/13	11,200	55 00	24·75	20·00	0·00	0·25	Remission maintained.
		9/3/13	11,200	55·25	32·00	12·00	0 50	0·25	Good remission; working.
		12/6/13	10,800	64·00	27 50	8·00	0·50	0·00	Still in remission; especially physically; working.
		14/8/13	9,800	66·50	26·50	7·00	0·00	0·00	The same; works; demented; clean.
		15/9/13	14,400	70·00	23·00	6·50	0·00	0·50	Confused; refusing food; up still.
		19/11/13	11,800	77·50	17·00	5·50	0·00	0·00	Taken in midst of seizures; retention of urine; refuses food. Going down rapidly. Died 29/12/13.
T. C.	9/6/11	10/6/11	26,800	89·50	2·00	8·25	—	0·25	Florid state; very ill mind and body.
		2/10/11	11,600	69·00	19·00	12·0	—	—	Much quieter; not troublesome; incoherent and untidy.
		21/11/11	—	61·50	12·00	22·75	2·75	1·00	Remission, but not a pronounced one; working; tidy.
		16/1/12	—	57·25	17·00	24·50	1·00	0·25	Remission continues fairly well marked, not one pronounced kind; working; tidy.
		25/10/12	14,200	78·0	12·50	8·75	0·50	0·25	In relapse and has been for some weeks; restless and noisy.
		14/11/12	—	73·50	7·25	18·75	—	0·50	Noisy; troublesome in bed.
		18/12/12	17,200	92·25	4·00	3·75	—	—	In extremis after seizures; died same night.
D. L.	2/9/12	13/11/12	10,000	—	—	—	—	—	Three seizures on 25/12/12. Temperature 100°. Hemiparesis of the right side; confused and wandering.
		27/12/12	17,000	79·50	9·75	9·75	1·00	0 00	
		10/2/13	10,400	65·75	19·75	12·50	1·75	0 25	Four hours after seizures.
		17/2/13	12,000	79·50	11·75	8·5	0·25	—	Large number of seizures.
		11/4/13	21,000	84 00	10·75	5·25	0·00	0·00	Three seizures night of 10/4/13; confused.
		23/5/13	8,000	52·50	37·00	10·50	0·00	0·00	Good remission; up and about.
		29/5/13	7,800	53·25	33·00	12·25	1 25	0·25	Still in remission.
		24/6/13	23,000	92·00	4·00	4·00	0·00	0·00	Taken in seizures.
		25/7/13	12,200	60·00	30·00	9·00	0·50	0·50	Quiescent; up; clean (no work).
		28/7/13	11,600	68 50	24 00	6·00	0·00	1·50	Seizures starting. Put to bed about 27/7/13.
		31/7/13	18,000	85·00	9·00	6·00	0·00	0·00	In seizures; severe.
		29/8/13	9,200	65·00	28·50	5·50	1·00	0·00	Restless and confused.
		10/9/13	11,000	61·00	25·00	9·00	2·00	1·00	Same. Died 29/10/13.
T. G.	25/2/11	12/11/12	11,000	64·02	21·75	13·50	0·75	—	Partial remission, but getting dirty (quiescent, rather).
		20/5/13	10,800	59·75	31·25	9·00	0·00	0·00	Remission; plays cards; up and about.
		22/7/13	12,200	49·50	39·50	9·00	1·00	1·00	Good remission as above; working.
		9/9/13	9,200	63·00	29·50	7·50	0·00	0·00	More demented; not working.
		6/11/13	14,500	60·00	30·00	10·00	0·00	0·00	Same.
		3/12/13	9,400	72·00	21·50	6·00	0·50	0·00	In seizures (minor).
		2/1/14	21,800	74·00	13·00	13·00	0·00	0·00	Temperature 102°. Cannot stand or speak; "suppressed fit" according to attendant.
		21/1/14	16,600	65·50	19·50	15·00	0·00	0·00	Up again; getting more demented; clean.
		29/1/14	15,400	69 00	16·50	14·50	0·00	0·00	Up again; not working.
		10/2/14	14,600	79·00	13·00	8·00	0·00	0·00	Temperature 99·2°. Confused; "suppressed fit."

They are increased—and more especially in exacerbations of or in pronounced cases of the malady—in epilepsy, dementia præcox, dementia paralytica, dementia senilis, but not in simple functional melancholia nor in paranoia. These are the conclusions of Pfeiffer and de Crinis[3] (1913), who have, I think, done the most extensive work in this direction. I give here tables of antitryptic tests which I have carried out. The technique I employed was that recommended by Pfeiffer and de Crinis, but the serum to be tested was used in a dilution of 1 : 40 and not 1 : 20, as in their cases, as I found that the sera of my patients prevented trypsin digestion too strongly in the latter dilution. Hammersten's casein (1 per cent.) and Merck's trypsin (0·1 per cent.) were used, freshly prepared each time. The titre of the trypsin was ascertained, the solution being placed against a fixed quantity of the casein solution in amounts increasing by 0·1 c.c., from 0·1 c.c. to 1·2 c.c. The tubes, after 30 minutes in the incubator, had three drops of an acetic-alcohol mixture added in each case. The first tube to remain clear—free from cloudiness—at the close of 30 seconds was taken as indicating the titre of trypsin. The inhibiting power of the serum from different cases was ascertained by adding a fixed quantity of the diluted serum to the trypsin-casein solution, in progressively increasing strengths of trypsin, as above indicated. The tubes were treated as above. The first clear tube in each series was noted, and the figure compared with the titre figure. If the first tube clear in the titre series were 0·7, in the control serum 1·3, and in a patient's serum 2·0; 1·3 less 0·7 = 0·6; 2·0 less 0·7 = 1·3. Multiplying these figures by 100, we get 60 and 130 respectively, representing the antitryptic units in the control and in the patient respectively. This explanation will serve to make the accompanying Tables (XII. and XIII.) comprehensible. It will be seen that the antitryptic unit is, with few exceptions, higher for the patients tested than for the control (a farm patient, chronic, quiet dement) on the same date. It is highest in cases of active dementia paralytica and senile dementia (S., Y., Bl., C), all near death (katabolism marked). One case (Sm.), recurrent confusional insanity, unit = 130, is anomalous. Cases of dementia paralytica in remission (St., W.) have a lower figure than the active cases (S., Y.).

TABLE XII.—*Antitryptic Tests.*

Date.	Titre system.	G. Control.	B. Dementia præcox. Still fairly active.	H. Same class as B.	P. Dementia præcox.	E. Recurrent mania.	S. G.P.I. Active disease near death.	St. G.P.I. Remission (marked).	T. Dementia præcox. Chronic	P. Tabes delusional, not active.	T. Mild confusional.
	The figures below indicate antitryptic units.										
1/4/14 (serum 1 : 20, first tube clear).	0·8	90	140	150	—	—	—	—	—	—	—
3/4/14 (serum 1 : 40 from now on).	0·5	40	80	80	—	—	—	—	—	—	—
15/4/14.	0·6	90	110	100	70	—	—	—	—	—	—
22/4/14.	0·8	50	100	70	—	100	—	—	—	—	—
29/4/14.	0·8	70	—	90	—	60	150	—	—	—	—
6/5/14.	1·0	60	60	—	—	—	120	60	90	—	—
13/5/14.	0·8	50	—	—	—	—	160	—	—	80	100
20/5/14.	0·7	60	—	—	—	—	Died 17/5/14	80	—	—	90
27/5/14.	0·7	70	—	—	--	110	—	—	—	—	100
3/6/14.	0·9	60	—	—	—	—	—	—	—	—	—
10/6/14.	0·9	—	—	—	120*	—	—	—	—	70†	—
12/6/14.	0·8	40	—	—	—	—	—	—	—	—	—

* Boil on face. † Better (quiescent).

Nothing is known as to the nature of these antitryptic substances; at present, at any rate, there is no sufficient evidence to show that they are connected with the *abbau produkte* upon which the Abderhalden test depends, or with products of incomplete protein-metabolism. The important point about this modern work in respect to ferments and antiferments in the serum, as far as it concerns the domain of psychiatry, is that it affords considerable reason for hoping that by its means we shall be enabled to distinguish between "functional" and "organic" disease, or that which is recoverable and that which is irrecoverable (in the present state of our knowledge). But this work does not throw light upon the ultimate problems of pathogenesis in the "organic" disorders. It is precisely in the instances in which ferments and antiferments are shown to exist that the products of degeneration of the nervous or noble element of the cerebral tissue are to be found by the histological methods of Alzheimer, together with amœboid glia-cells in abundance, which themselves undergo degeneration when their function of removing and transporting break-down products of the nervous tissue to the perivascular lymph-channels has been fulfilled. In these cases the glia-cells and lymph-channels

TABLE XIII.—*Antitryptic Tests.*

Date.	Titre system.	W. G.P.I. Remission.	Sm. Confusional. Recurrent.	Y. G.P.I. near death.	Bl. Senile dementia. Breaking up.	C. As last.	R. Senile mania.	L. G.P.I. subacute.
	The figures below indicate antitryptic units.							
13/5/14 Serum 1 : 40.	0·8	70	—	—	—	—	—	—
20/5/14	0·7	—	130	170	—	—	—	—
27/5/14	0·7	—	—	Died, 22/5/14	140	130	—	—
3/6/14	0·9	100	—	—	130	Died, 1/6/14.	100	100
10/6/14	0·9	80	—	—	—	—	—	—
12/6/14	0·8	—	50*	—	120	—	80	70

* Much improved.
For controls, see corresponding dates in Table XII.

around the cerebral blood-vessels are to be seen loaded with the products of disintegration, which of course pass into the circulation. The nature of these breakdown products requires to be investigated by micro-chemical methods.

INFLUENCE OF INTERCURRENT DISEASE.

I would now ask your attention to the subject of the amelioration and cure of mental maladies through the agency of intercurrent disease, and of methods based upon this object-lesson of nature. Amongst the general diseases which are instrumental in this manner, typhoid fever, erysipelas, and ague are probably the most potent. Within the last year I have seen two cases respectively of stupor and of melancholia, in which scarlet fever was followed by amelioration, in one of them recovery taking place. Severe attacks of asylum dysentery also produce amelioration. But these diseases do not appertain to any particular class, such as that of the specific fevers; neither can it be said that the therapeutic effectiveness of a malady depends upon the degree of fever associated with it. This is in accord with experience obtained with methods, hereafter to be referred to, for the promotion of leucocytosis; the beneficial result is not necessarily associated with pyrexia. In what manner the cure of mental disorder by intercurrent bodily disease is effected, we are ignorant. It is idle to enter into explanations of a purely hypothetical kind, and the most I shall allow myself is to say that the suggestion put forward by Kauffmann, to which reference was made in the first lecture, to the effect that the improvement in question is due to quickening of oxidation and of removal of products of metabolism, is worth attention. In the meantime we have to take note of the fact that a hyperleucocytosis is frequently present in these intercurrent maladies. I have mentioned above certain diseases which have a particularly favourable effect upon recoverable insanity; others which often exercise a powerful influence for good are pneumonia and septic infections, especially extensive cellulitis. It is mainly in mania, melancholia, and confusional states, and in comparatively early cases, that one sees marked improvement and cure, but sometimes also in apparently hopeless cases of long duration. Stuporose states, such as nowadays would probably be termed "hebephrenia," are also benefited. I have never seen a case of the katatonic variety of dementia præcox improved in this way, nor one of insanity with epilepsy, nor of systematised delusional insanity, but as regards this last I have never had a case under observation in the very early stage. It is therefore the psychoses which lend themselves to the theory of a toxic origin which are benefited.

As regards dementia paralytica, all with experience have observed the remarkable remissions induced by intercurrent disease. This is usually of a local kind, taking the form of extensive cellulitis or septic abscess in consequence of the habits and predisposition of the patient. High fever of long duration is usual, and the illness is severe. On recovery the patient frequently has a pronounced remission, so that he can be discharged to the care of his friends, and remains comparatively well for a year or more. My experience in this regard has been with cases of the disease several months to a year and more old; and I should say, judging by the literature, that reliable records of cases in which a remission was induced by intercurrent illness quite early in the disease are very uncommon. It is especially these which would be of interest. Instances of remission of extraordinary duration are on record; thus, Jurmann,[4] a Russian observer, records cases which lasted from 4 to 12 years, following upon phlegmon of a limb, gangrene of the lung, typhoid fever, and extensive burns. Such instances serve to show that the action of the causative agent (? spirochæta) or agents can be checked.

Attempts have been and are being made to benefit by the example furnished of the amelioration and cure of mental disorders by the agency of intercurrent bodily disease. In the absence of knowledge of the *modus operandi* in these cases, our efforts are at present limited to the application of methods calculated to produce leucocytosis or fever. Such indications as we possess point, I think, to the propriety of the former rather than the latter. Physicians up to some 30 years ago would appear to have favoured the hypothesis that intercurrent disease acted through the medium of the fever which accompanied it, or possibly of the "counter-irritation," in the case of localised inflammation, such as cellulitis. Up to 25 years ago blisters were applied over the mastoid processes, in cases of stupor especially, but the earlier practice of placing a seton in the nape of the neck or of blistering the scalp had been abandoned. These methods were sometimes based upon the hypothesis that peripheral stimulation of the cranial and cervical nerves might favourably influence the cerebral cortex, more commonly upon the theory that a "reaction"—by which an alteration of cerebral metabolism was probably meant—could be induced. Next in order came the attempts to promote a sterile abscess in such parts as the loin or buttock by means of turpentine. These have not found favour, although Bruce[5] and others have recorded cases of mania in which the attack was arrested and recovery hastened, mental improvement being associated with great proportional increase in the neutrophile cell count. The difficulty and risk associated with the nursing of an irresponsible and restless patient, of faulty habits, under the circumstances, can be appreciated.

TREATMENT BY NUCLEINATE OF SODA.

Since about 1909 the drugs used, chiefly hypodermically, have been such as promote leucocytosis; thus, cinnamate of soda, nucleinic acid, and nucleinate of soda. The last-named is now most in vogue, and has been mainly employed and advocated by Fischer, of Prague, and Donath, of Budapest, more especially for the purpose of inducing remissions in dementia paralytica, but of late also for promoting recovery in dementia præcox. Fischer[6] reported in 1909 upon 22 cases of dementia paralytica, in which, by the hypodermic injection of sodium nucleinate, a leucocytosis of 16,000 to 25,000 was produced, lasting three days. In 4 long-lasting remission was obtained, 4 died, and the rest had remained stationary since 1908 (date unmentioned). Of 22 untreated cases none had remissions and 8 died. In a second series the dosage was ½ to 3 grammes in aqueous solution every three to five days. Of 10 patients so treated, 5 showed well-marked remission, which later passed off. Of 10 controls, only 1 showed a remission, due to an intercurrent septic process. Donath[7] has had a large experience in this treatment, and is its main advocate. He first recommended a 2·5 per cent. to 3 per cent. aqueous solution of sodium nucleinate, and injected 50–100 c.c., and gave eight injections at intervals of five to seven days. The temperature only rose 2 or 3 degrees after injection and fell to normal in about three days. A leucocytosis of 21,000 per c.mm. was produced on the average, but as much as 61,000 was reached. His first series comprised 21 cases of dementia paralytica. Ten were improved to the extent that they were able to work and earn money, and 5 so that they returned home; 6 were unchanged. The longest duration of improvement was three years. In a second series 3 out of 15 were improved to the extent that they could work as before; 6 were merely improved, the remaining 6 not improved. Hüssels[8] used doses of from 1 to 2·5 grammes in aqueous solution, as much as 100 c.c. being injected at a time and every four days, seven injections in all. Pyrexia reached 40·3° C., but leucocytal increase amounted to from 60 per cent. to 100 per cent., and leucocytosis lasted rather longer than pyrexia. Of 5 cases of dementia paralytica so treated, 4 were advanced in the disease; the fifth was not and showed evident improvement. Lomer,[9] with doses of 4 grammes in 100 c.c. of water, had no good efforts. Jurmann[10] obtained improvement in 7 out of 17 cases of dementia paralytica, as indicated by evidence adduced. Itten,[11] who treated 9 cases of dementia præcox without any permanent benefit, employed the nucleinate in quite insufficient doses, so that his results must be discounted. The necessity for intensive treatment was dwelt upon by Donath in his communication upon this method at the last International Congress of Medicine. Lépine[12] had no success in 13 cases of dementia præcox, but claims to have obtained 8 cures and 2 improvements in 13 cases of manic-depressive insanity and cure in 7 out of 8 cases of "confusional" insanity, notable improvement in the one. Lundvall[13] employed up to 3·8 grammes sodium nucleinate as a single dose, adding arsenic and sodium cinnamate to increase the leucocytagogue effect. Hyperthermia subsided in 24 hours, whilst leucocytosis lasted a day or two longer. Of 18 cases of dementia præcox, 4 recovered and 9 were considerably improved. Donath, in his communication referred to, states that he now employs a 10 per cent. of sodium nucleinate dissolved in 1 per cent. of sodium chloride. The dose of the drug ranges from 0·5 to 5·0 grammes, so that the largest bulk of fluid injected would be 50 c.c. Injections take place every 4 or 5 days, and 6 to 12 are given. Of 14 cases of dementia præcox thus treated, 3 were regarded as cured—they took up their work again, that is to say; 5 were improved. The cured and improved cases—taken together—reported by Donath and Lundvall respectively amounted to 57 per cent. and 72 per cent. These are remarkable figures compared with the ordinary ones, gathered from cases which have received no particular treatment. Recovery may be said to occur in from 13 per cent. to 20 per cent. of the katatonic group, which is the least unfavourable one. The latest figures are, I believe, those of H. Schmidt,[14] published in 1912, based upon the histories of 450 cases of dementia præcox discharged between 1901 and 1910. He found recovery in 16·2 per cent., in 15·5 per cent. recovery with defect. If the results of Donath and Lundvall are approached by other workers there will certainly be ground for the dictum of the former, that henceforth the passive attitude adopted towards cases of dementia præcox in respect of treatment is unjustifiable. In 1913 Moretti,[15] from his favourable experience with sodium nucleinate, thought the method justified in early cases. Cases such as those reported by Lépine and by Brown and Ross,[16] in which psychoses with indications of a toxic origin, such as mania-melancholia, acute confusional, and acute delirious conditions, have been cut short by injections of nucleinic acid, in some cases preceded by colloidal silver (and in all cases there was pronounced leucocytosis), show that the dogma that no measures can interrupt or modify the course of psychoses of this type is not correct.

Changes induced by Sodium Nucleinate.—Colloidal Metals.

In the absence of statements as to the qualitative cell count in cases which have received injections of sodium nucleinate it may be as well to mention that in the cases which I have injected, with from 50 c.c. to 100 c.c. of a 2 per cent. solution, the neutrophile cells showed a considerable proportional rise in number as a result of the injections. For the rest, there was always leucocytosis and increased pulse-rate; this was a more marked feature than rise in temperature or in the respiration rate. The changes noted passed off in a few days. I have found, in common with the observers quoted, that the effect produced on the temperature and respiration of the patient is negligible; there may be a rise of a degree or two in the former, but any such effect is very transient. Whereas the pulse-rate is notably increased, and this change, together with the leucocytosis, lasts a few days longer than any change in respect of temperature and pulse. The changes induced can be maintained for a considerable period by regular treatment, but the influence of the drug passes away in time. The favourable results which have been reported in disorders with a toxic origin as a result of the employment of colloidal metals (collargol, electrargol, leptynol—this last is the colloidal form of palladium) point to the desirability of using them in the same kinds of mental disorder as are favourably influenced by sodium nucleinate. I cannot here enter into the statements which have been made concerning the manner in which these colloidal preparations act (by promoting oxidation, especially); no sufficient evidence has been produced for them. But there is definite evidence that these substances produce a leucocytosis with increase in the neutrophile percentage, and a considerable increase in the opsonic power of the serum.

THE EFFECTS OF TUBERCULIN AND OTHER TREATMENT.

The attempts to promote the general powers of resistance in dementia paralytica, and to induce and prolong remissions by means of the injection of tuberculin, appear to have originated with the Viennese school, and have been mainly employed and advocated by Wagner von Jauregg and Pilcz. Although employed by the Viennese teachers and their pupils for more than 10 years, it cannot be said that any noteworthy publications have appeared from other sources; the method has not, in fact, been tested to any extent elsewhere. The dose of tuberculin commences at 0·01 mg., and is increased every second day by 0·02 mg., when reaction is weak or absent, by 0·05 mg. The maximum dose in most instances is 0·5 mg., but it has been as much as 1·0 mg. A febrile reaction of more than 39° C. is an indication that treatment should cease. No fever should be present on the day of injection. Both Wagner and Pilcz have drawn attention to the desirability of selecting early cases for treatment. The duration of the disease in patients usually received into public institutions renders them unsuitable subjects. The chief publications of Wagner and Pilcz[17] known to me are mentioned in the bibliography; here I propose merely to refer to three groups of statistics, two of which are from the latter observer. The first deals with 66 cases of dementia paralytica treated as described, and 66 untreated ones. Of the former 20 and of the latter 39 died within the first year. At the close of four years 8 treated and 5 untreated were alive, the former in better mental and physical condition. In 1911 Pilcz published results in 86 cases, a considerable number of which were in quite an early stage of the disease; in 52 (60·32 per cent.) there was a favourable influence, of which 20 (23·2 per cent.) showed merely a quiescent condition; 9 (10·44 per cent.) marked remission lasting one to two years or more; and 23 (26·8 per cent.) got well to the extent that they resumed work (of whom 10 still remained at work two years later). Meyer,[18] in a publication appearing in 1912, gives the results of the Wagner-Pilcz treatment at the large Viennese asylum "am Steinhof." Of 112 cases of general paralysis 51 (45·5 per cent.) were uninfluenced, 22 (19·6 per cent.) showed slackening in the rate of progress of the disease, 28 (25 per cent.) marked remission, and 11 (9·9 per cent.) took up work again. From the combined statistics of Pilcz and Meyer it appears that from 35 per cent. to 36 per cent. of the cases treated passed into a remission of a marked kind. Statistics on the point are unknown to me, but I believe that this is a higher degree of frequency than what is observed in the untreated disease. Those with experience claim that improvements and remissions occur oftener and last longer in cases treated with tuberculin than in those who receive no treatment. The method is stated to be without danger in the absence of tuberculosis. According to Gulland and Goodall, in their work, "The Blood," injections of tuberculin are followed by an increased leucocyte count, there being an increase of neutrophiles and frequently also of lymphocytes. In certain cases under my care a relative lymphocytosis resulted from such injections, and I therefore suggested to Dr. D. L. Jackson, then assistant physician at Cardiff Mental Hospital, that he should observe the comparative white cell counts in cases of dementia paralytica who were receiving tuberculin. These were six in number, four receiving T.R. and two T.B.E. The dosage began with 0·0001 mg. in each case and was gradually increased to 0·01 mg. No changes occurred in the qualitative leucocytal counts until doses ranging from 0·0002 mg. to 0·001 mg. were employed; between these limits a lymphocytosis began to appear; the percentage of lymphocytes rose to as much as 50 in some of the cases. With the higher doses no more marked changes were found than when 0·001 mg. was given.

These results lead one to inquire whether the beneficial effect recorded as following upon the use of tuberculin in cases of dementia paralytica may be associated with the production of lymphocytosis, which would be an explanation based upon the observations recorded at the beginning of this lecture, with reference to the qualitative leucocytal count in states of remission and quiescence. This explanation would not account for improvement brought about by the use of sodium nucleinate. No relationship seems to exist between febrile reaction and the favourable results obtained with tuberculin; as with sodium nucleinate, so in this case, any increase of temperature produced is very slight.

Recently mercury or salvarsan has been used in combination with sodium nucleinate or tuberculin. Whilst a higher degree of leucocytosis is obtainable in this way there is the possibility that the resulting benefit is due to the direct action of these drugs rather than to leucocytal action, the cases treated being in reality not cases of dementia paralytica but of cerebral lues in the usual sense. But Pilcz,[19] at the Congress of Neurology and Psychiatry held at Ghent last year, stated that remissions of much more marked and prolonged kind are obtainable in undoubted general paralysis by this means than occur spontaneously, and that they occur in the most unfavourable type of case, and occur repeatedly on repeated injection. Other methods, which are also methods whereby leucocytosis is promoted, such as the inoculation of dead cultures of staphylococcus and streptococcus, are now being tried in dementia paralytica. Marked remissions are noted after infections in which staphylococci more especially are concerned. Wagner[20] has recently obtained striking remissions in seven cases of this disease, of the maniacal type, by the use of polyvalent staphylococcal vaccine. Here, again, the temperature was but slightly affected, whereas the increase in the pulse-rate was marked.

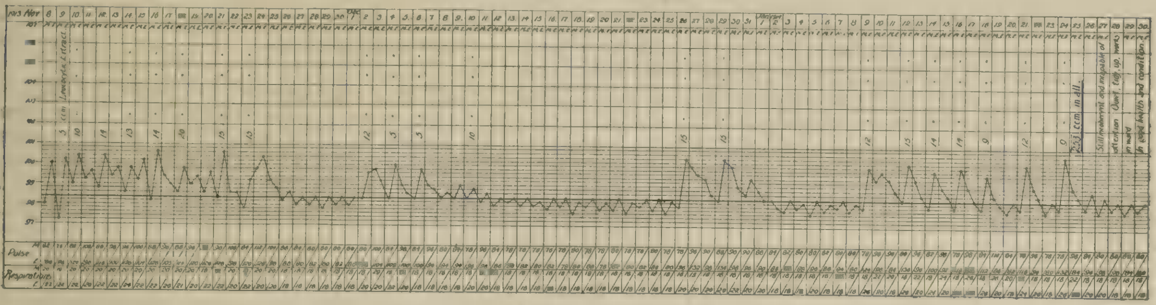
LEUCOCYTE EXTRACT.

In 1908 Hiss[21] published observations upon the curative influence of extracts of leucocytes upon infections in animals. These observations were followed by others, developing out of them, by the same and other workers. In the bibliography I give the references to this work, and must content myself with a brief account of the principles upon which it was based, the application of these in practice, and the results. Hiss[21] discusses the hypotheses and facts of immunity, and advances the reasons which support the belief that leucocytes play a dominant part in the protection of the animal economy.

Proceeding upon the hypothesis that "substances—digestive, poison-neutralising, complementary—might possibly be liberated from leucocytes by methods of extraction and introduced in this free condition into infected animals or man," he experimented upon animals (rabbits) in which certain prevalent infections had been produced by inoculation with organisms (staphylo- and streptococci, pneumococci, meningococci (typhoid)), so that they suffered from severe septicæmia or toxæmia. These received extract of leucocytes prepared from normal or immunised rabbits, with the result that they survived infections rapidly fatal to control animals; the beneficial effect of this treatment was apparent by such indications as fall in temperature and gain in weight. The exact action of the extracted substance is a matter of conjecture. Zinsser[22] has shown that the extract contains bactericidal substances in insignificant amount compared to the serum, and contains no complement. Hiss and Zinsser, in a subsequent communication in the same periodical, give reasons for ascribing the favourable influence of the procedure adopted to a "faculty of neutralisation towards toxic-bacterial products possessed by the extract." This explanation is borne out by observations by them upon the treatment as applied to infections in man. The beneficial results observed in epidemic meningitis—

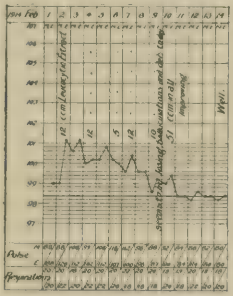
especially the promptitude of the reduction of such symptoms as vomiting, delirium, stupor, and reduction of temperature—are most reasonably explained upon the theory of neutralisation of toxin. The like holds good for the favourable results obtained in lobar pneumonia. Hiss and Zinsser, in the same periodical, report upon these. Floyd and Lucas[23] follow in a later number with a larger series of cases of this disease. They approximately standardised the extract, so that about 20,000,000 leucocytes were given in 10 c.c. of water. About 10 c.c. injected subcutaneously twice daily was their ordinary dose, but in severe cases as much as 20 c.c. were given three or four times in the 24 hours. They found that no harm was done by the extract, whilst in a number of cases the disease was apparently shortened. Noticeable improvement in the symptoms and in the comfort of the patient was seen. Toxæmia was notably lessened. Up to the date of these observations there was not sufficient material upon which to study case-mortality in cases treated with the extract and in cases untreated. The latest paper on this subject which has come to my notice is one by Hiss,[24] published in 1913, in which he confirms the utility of leucocytic extract in the control of infectious disease, whether general or local, and given reasons for the view that the beneficial results obtained are due, not to a bactericidal or phagocytic action of the leucocytes employed, but rather to a poison-neutralising or poison-prohibiting action.

FIG. 10.



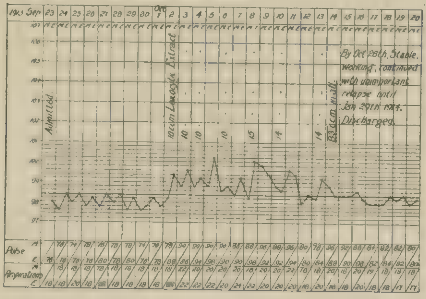
Acute mania; fairly good condition. E. B., aged 22, admitted Nov. 6th, 1913. (The lettering on the chart shows the administration of c.c. leucocyte extract, 253 c.c. in all, being reached on Jan. 25th, 1914. By Jan. 27th, though still incoherent and incapable of attention, he was quiet and working in the ward. On Jan. 30th he was in good health and condition.) (The figures and lettering are clear under a hand lens.)

FIG. 11.



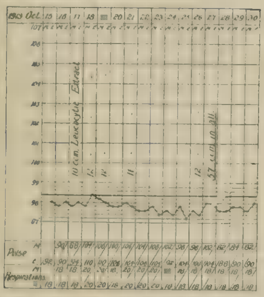
Acute confusional case; marked hallucinations. R. B., aged 32, admitted Jan. 28th, 1914.

FIG. 13.



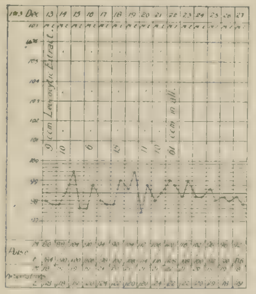
Acute delusions; agitation; physical reduction marked. E. W., aged 22, admitted Sept. 23rd, 1913.

FIG. 12.



Melancholia. A. S., aged 26, admitted Sept. 12th, 1913. (The patient's physical reduction on admission was marked. The chart ends on Oct. 30th. By Nov. 10th he was working and was discharged on Nov. 27th, 1913.)

FIG. 14.



Acute confusion. S. P., aged 26, admitted Dec. 9th, 1913. (The patient's physical reduction on admission was marked. By January, 1914. he was working, and at the close of the month was awaiting discharge.)

Employment of Leucocyte Extract in Mental Cases.

The perusal of the beneficial effects produced in acute infective diseases by the early administration of leucocytic extract—and I have to thank my colleague, Dr. Schölberg, for bringing this literature to my notice—suggested the application of this treatment in cases of acute and recent insanity, similar to those in which sodium nucleinate and like drugs have been employed. In this connexion I would allude to the observations recorded in the second lecture, which showed that for some unknown reason a higher opsonic index was found in respect of two organisms (intestinal anaërobes) when the patient's leucocytes were replaced by those of a healthy control. This observation does not demonstrate more than a greater capacity for ingestion of organisms on the part of the healthy control's leucocytes. But we are not restricted to the dogma that the rôle of the leucocyte is entirely a passive one, and the results obtained in toxic conditions by the American observers whom I have cited are scarcely to be explained on this view. It appears to me very desirable that a thorough trial should be given to the method in such descriptions of mental disorder as acute mania and melancholia, acute confusional states with hallucinations, stuporose conditions, psychoses of exhaustion, and as early as possible in these conditions.

For the past two years I have given considerable attention to the preparation of leucocytic extract upon the basis of the American work recorded, and of late I have been able to obtain it in sufficient quantities for use, and have employed, and am employing, it in cases of the kind mentioned. For the purpose of producing an exudation of leucocytes in the pleural cavity of the rabbit aleuronate was employed, as recommended by Floyd and Lucas. The animal should be in good condition and weigh from 1600 to 2000 grammes. A 5 per cent. suspension of aleuronate in cold starch was added to double-strength neutral broth whilst boiling. Sufficient of the boiling broth was rubbed up with the starch suspension to make a suitable emulsion, and the mixture was then put into the boiling broth; the latter was then sterilised. The aleuronate-broth mixture appeared to lose its potency at the end of two to three months, and a fresh supply was made. Floyd and Lucas were able to obtain an exudate in 24 hours by injection of this mixture to the amount of 10 c.c. into each pleural cavity. This seems an enormous amount. Schölberg and I, in our earlier experiments, used the mixture as described, but in less amount, about 2 c.c. being injected into each cavity. We found that little or no exudate was produced. By mixing pure turpentine with the aleuronate mixture in the proportion of 1 to 4, and injecting about 1·2 c.c. into each pleural cavity, we obtained an exudate with a considerable degree of regularity, the best results being achieved when the rabbit was killed in about 48 hours. The nature of the exudate varied in different animals, as also its amount. Sometimes there was a serous effusion comparatively deficient in leucocytes, sometimes a very turbid exudate, quickly becoming semi-gelatinous in a tube; and the amounts obtained from individual rabbits varied from 10 to 60 or more c.c.

The technique of collection which I employ is as follows. The animal is killed by chloroform, stretched and tied supine, its thorax and the abdomen adjoining shaved, the flesh thoroughly seared. The pleural cavity on each side is then cut open with sterile scissors, and the exudate drawn up in sterile 10 c.c. pipettes and placed in sterile 10 c.c. centrifugal tubes, 5 c.c. in each tube; to each tube sterile citrate is added, allowing sufficient room for fitting a sterile rubber cork. Each tube is well shaken, and the tubes are then centrifugalised for half an hour. The supernatant fluid is then pipetted off, and sterile salt solution (0·85 per cent.) added to the deposit of corpuscles. The tubes are well shaken and placed in the incubator at 37° C. for 24 hours. The contents are then transferred to sterile Pasteur flasks, not more than 10 c.c. to each flask, to minimise the loss in case of contamination during the proceedings detailed, and to each flask 0·5 to 1 c.c. of a 10 per cent. solution of phenol is added. The flasks are then kept in the ice chest. By inoculating a broth tube from each Pasteur flask and incubating for at least 24 hours, it was ascertained that the contents of the flask were sterile before use. I have not hitherto found time to work out an approximate standardisation of the exudate. It will be seen from the accompanying charts (Figs. 10 to 14) (specimens of those exhibited at the lecture) that the daily doses given have been of moderate amount; much larger doses were given by Floyd and Lucas in pneumonia. These being the first cases I have dealt with I restricted the dose, but should not do so in future cases. The injections were made subcutaneously between the scapulæ. Out of some 80 injections, averaging about 8 c.c. of extract to each, not one was attended with any untoward result. The patients were, of course, kept in bed the whole time. The charts show that the injections produced a marked acceleration of pulse-rate, very slight acceleration of the respiratory rate, and usually a slight rise in temperature. Control injections with 10–15 c.c. of physiological salt solution produced no effect in any of these directions. The charts deal with but few patients, and it would be premature to record any therapeutic results; but the method is one to be persevered with. The following table (Table XIV.) shows that an absolute and relative polynucleosis is produced by the injection of leucocytic extract. [Only one case—B. W.—is given here for reasons of space.]

TABLE XIV.—*Effect upon the White Blood Cell Count of Injection of Leucocytic Extract.*

The total of each count is the average of the figures per c.mm. deduced from reckoning three sets of 400 squares each. The percentage of polymorphs is based upon 400 cells for each count.

	Leucocytes per c.mm.		Percentage of polymorphs.	
—	Before injection of leucocytic extract.	After injection of leucocytic extract.	Before injection of leucocytic extract.	After injection of leucocytic extract.
B. W.	13,400 (average of 2 counts).	15,866 (average of 3 counts).	63·50 (average of 2 counts).	73·3 (average of 3 counts).
	Controls.			
—	Before injection of 0·86 per cent. salt solution in equal bulk.	After injection of salt solution.	Before injection of salt solution.	After injection of salt solution.
S.	7600 (average of 2 counts).	7500 (average of 2 counts).	65·62 (average of 2 counts).	67·75 (average of 2 counts).
H.	15,266 (average of 3 counts).	12,066 (average of 3 counts).	61·00 (average of 3 counts).	64·50 (average of 3 counts).

THE PRECIPITIN TEST IN THE PSYCHOSES.

The discovery of precipitin is based upon researches into the problems of immunity, and is due primarily to the work of R. Kraus. It has been shown that the serum of an animal which has been repeatedly injected with serum from another animal of a different kind gives a precipitate when brought into contact with the serum used for injection or with that of an allied animal in certain proportions. Thus, the serum of rabbits which have been so injected with human blood-serum gives a precipitate with such serum, and with the serum of apes, but not with other serum. Similar "related reactions" exist in other instances; thus "antiserum" from a fowl gives precipitate with pigeon's serum; from a horse with donkey's or tapir's; from a fox with dog's serum. As you are aware, this reaction has been extensively employed for forensic purposes, especially by Uhlenhuth. The precipitin reaction does not seem to have been widely tested in respect of its efficiency as a diagnostic agent in disease. Uhlenhuth and Weidanz in their work upon the formation of precipitin and the precipitin test refer to an experiment by Kullmann, who immunised rabbits with extract of carcinoma, and thus obtained a precipitating serum, which, however, gave no specific reaction with the serum of patients affected by carcinoma, a precipitate being likewise obtained by adding it to the serum of cases of nephritis or of healthy persons. As far as carcinoma is concerned, it has been shown by Romkes, whom the above-mentioned authors cite, that when all normally precipitable substances have been thrown down from the serum of the cancer patient by the addition of serum from a rabbit previously treated with normal human serum, no further precipitate is obtainable by adding antiserum from a rabbit injected with cancer emulsion. In other words, the precipitate formed with the carcinomatous serum on addition of its antiserum is not specific but is the same in nature and quantity as that formed with the same serum on addition of normal rabbit antiserum. The question as to whether specific precipitins can be produced by inoculating rabbits with serum from different kinds of insanity has received no attention, as far as I am aware, except from Geissler.[25] He states that the rabbit antiserum of cases of the katatonic variety of dementia præcox gave a precipitate in greater amount and in higher dilutions with the serum of katatonic cases than with that of a healthy sane control. The same applied to cases of the hebephrenic variety, and in both instances to all cases and not merely to individual ones. The observation did not hold good with the paranoidal form of the disease. The antisera in question gave no precipitate with the sera of general paralytics, epileptics, senile dements, neurasthenics, and others. If Geissler's observation is correct, a specific precipitin reaction occurs in the two chief varieties of dementia præcox. Ceni[26] found that the precipitating properties of epileptic serum did not differ from those of normal serum. Besta,[27] experimenting with pellagra serum, found no specificity of reaction.

In the absence of anything approaching adequate information, it seemed desirable to experiment with the blood of certain of the insane with a view to determining whether specific precipitins could be produced by inoculation of rabbits, and for this purpose Schölberg and I selected cases of dementia paralytica and dementia præcox; the former presenting well-marked symptoms of the second stage, the latter in an active stage of the disease. Blood was received from an arm vein through a sterile cannula into a sterile bottle, and the serum allowed to separate. Rabbits were inoculated intravenously, in accordance with the practice recommended by Uhlenhuth and Weidanz, at intervals of seven days with from 2·5 to 3·0 c.c. of the serum. Seven days after the third injection, and before each subsequent injection, about 3·0 c.c. of blood was removed from the dorsal vein of the ear, centrifugalised, and 0·1 c.c. of the serum added to 1 c.c. of a dilution of 1 in 1000 (salt solution) of the freshly obtained serum of the patient whose blood was to be tested. The antiserum was thus tested on the seventh day after each injection—that is, about the time at which, according to Uhlenhuth and Beumer, the production of precipitin in the rabbit's blood is most active. We found that when a precipitate was about to be formed the clear fluid of the tube concerned showed a characteristic cloudiness within a quarter of an hour, but flocculi took longer to appear; and it was from one to three and a half hours before the actual precipitate was apparent. The animal furnishing the precipitin was immediately killed under chloroform, the blood allowed to collect and clot in a sterile bottle, the serum filtered through a porcelain filter and received direct into ampoules, which were sealed as filled. This filtration and collection was kindly carried out by Dr. Stanford, research chemist, Cardiff Mental Hospital. Our results may be tabulated in Table XV.

TABLE XV.—*Particulars in respect to Production of Precipitin, with Results.*

Patient and disease.	Number of rabbits used.	Number in which precipitin obtained.	Amount of serum injected before precipitin formed.	Amount of serum in cases failing to yield precipitin.	Amount of cerebro-spinal fluid with like failure.	Remarks.
			c.c.	c.c.	c.c.	
M. J. D. G.P.I.	8	1 1:500)	12·5	13–27·5	—	In one case 21 c.c. serum and 19 c.c. cerebro-spinal fluid injected; no precipitin.
F. M. G.P.I.	3	1 (1:1000)	8·0	—	13–19·5	—
C. T. G.P.I.	8	0 ,,	—	15–23·5	15–17	—
M. J. G.P.I.	7	3 ,,	9·0 19·0 *26·5	17–20	13·0	*Only slight precipitin in this case.
F. L. Mel. Stupor.	2	1 ,,	*16·5	15·5	—	* Ditto.
J. H. G.P.I.	6	1 ,,	8·5	11–24	—	—
H. R. G.P.I.	5	0 ,,	—	16–24	—	—
W. B. G.P.I.	14	0 ,,	—	10–42	—	—
J. W. G.P.I.	12	2 ,,	16·0 8·0	8–27	—	—
M. R. (Dem. præcox).	7	*1 ,,	8·0	11–21·5	—	*A gain of 70 grm. in this case.
C. M. (Dem. præcox).	11	0 ,,	—	8–33·5	—	—
H. (Dem. præcox).	6	0 ,,	—	5·5–21·5	—	—
B. (Dem. præcox .	5	0 ,,	—	10·5-27·0	—	—
—	94	10 ,,	—	—	—	—

The first point shown by Table XV. is the small percentage of instances in which a precipitin was

TABLE XVI.—*Particulars in Respect to Production of a Precipitate in the Diluted Serum (unless otherwise stated) with Rabbit Antiserum in Various Kinds of Insanity.*

No.	Patient and disease.	Degree of dilution of patient's serum.					Anti-serum used.
		1/100	1/500	1/1000	1/10,000	1/20,000	
	21/1/1913						
3	F. M., Gen. par., homologous.	—	—	+	—	—	F.M.
4	T. I., Epil. dem.	—	—	+	—	—	,,
5	F. H., Gen. par.	—	—	+	—	—	,,
6	D. L., Control.	—	—	+	—	—	,,
7	D., Sane; florid syph.	—	—	+	—	—	,,
8	D-y., Sane; florid syph.	—	—	+	—	—	,,
9	Tr., Epil. dem.	—	—	+	—	—	,,
10	C. B., Gen. par.	—	—	Trace	—	—	,,
11	L., Imbecile.	—	—	,,	—	—	,,
12	M., Epil. imbecile.	—	—	,,	—	—	,,
13	B. L., Gen. par.	—	—	,,	—	—	,,
	20/3/1913						
14	M. J., Gen. par., homologous serum.	—	—	+	++ (½ to 1 hour).	—	M.J. Rabbit K.
15	C. J., Gen. par.	—	—	+	—	—	,,
16	B. P., Ac. mania.	—	—	+	+	—	,,
17	H., Subacute mania.	—	—	+	+ } 20 to 24 hrs.	—	,,
18	E. S., Gen. par.	—	—	+	+	—	,,
19	M., Gen. par. in seizures.	—	—	+	+	—	,,
20	V., Dem. præcox.	—	—	+	+	—	,,
	30/3/13						
21	M. J., Gen. Par. (same as 14).	—	—	+++	++	—	,,
22	L., Gen. par.	—	—	—	+	—	,,
23	H., ,, ,,	—	—	—	+	—	,,
24	A., Dem. præcox.	—	—	—	+	—	,,
25	C. T., ,, ,,	—	—	—	+	—	,,
26	C., Acute melan.	—	—	—	+	—	,,
27	R., ,, ,,	—	—	—	+	—	,,
28	D., ,, ,,	—	—	—	+	—	,,
	6/4/13						
29	M. J., Gen. par. (same as 14).	—	—	—	+++	—	,,
30	Dem. præcox.	—	—	—	++	—	,,
31	I., Melan.	—	—	—	++	—	,,
32	E. J., Gen. par.	—	—	—	+	—	,,
33	W. B., ,, ,,	—	—	—	+	—	,,
34	H. R., ,, ,,	—	—	—	+	—	,,
35	J. J., ,, ,,	—	—	—	+	—	,,
36	L., Delusional.	—	—	—	++	—	,,
37	F. H., Gen. par.	—	—	—	+	—	,,
38	N. A., Melan.	—	—	—	+	—	,,
	18/4/13						
38a	M. J., Gen. par. (same as 14).	—	—	—	+	—	,,
39	C. H. B., Gen. par.	—	—	—	+	—	,,
40	H. J., Ditto with tabes.	—	—	—	+	—	,,
41	J. F., delusional.	—	—	—	+	—	,,
42	D. L., Dissem. scler.	—	—	—	+	—	,,
43	B. L., Gen. par.	—	—	—	+	—	,,
44	W. O., Imbecility.	—	—	—	+	—	,,
45	P., Delus. alcoholism.	—	—	—	+++	—	,,
46	I., Epil. imbecile.	—	—	—	+	—	,,
	7/6/13						
47	J. W., Gen. par.	—	—	+	—	—	,,
48	W. R., Epil. dem.	—	—	+	—	—	M.J. Rabbit K.
49	W. B., Dem. præcox.	—	—	+	—	—	,,
	1/4/13						
59	J. W., Gen. par., remission.	0	—	—	—	—	,,
60	J. S. K., Gen. par., remission.	0	—	—	—	—	,,
	7/4/13						
61	Y., Gen. par., remission.	0	—	—	—	—	,,
	22/4/13						
62	J. H., Gen. par. (homologous).	—	—	—	++	+	J.H. Rabbit 7.
63	F. H., Gen. par.	—	—	—	+	++	,,
64	C., Chr. dem. præcox.	—	—	—	+	+	,,
	23/4/13						
65	S., Gen. par.	—	—	—	—	+	,,
66	C. T., ,, ,,	—	—	—	—	Slight.	,,
67	L. ,, ,,	—	—	—	—	+	,,
68	A., Chr. dem. præcox.	—	—	—	—	+	,,
69	V., Chr. dem. præcox.	—	—	—	—	+	,,
70	M. J., Gen. par.	—	—	—	—	+	,,
71	B. P., Ac. mania.	—	—	—	—	+	,,
72	M., Gen. par.	—	—	—	—	+	,,
73	C. T., Chr. dem. præcox.	—	—	—	—	+	,,
74	W. R., Chr. melan.	—	—	—	—	+	,,
75	E. D., ,, ,,	—	—	—	—	+	,,
76	E. C., Chr. dem. præcox.	—	—	—	—	+	,,
77	E. J., Gen. par.	—	—	—	—	+	,,
78	W. B., ,, ,,	—	—	—	—	+	,,
79	W. R., ,, ,,	—	—	—	—	+	,,
80	J. J., ,, ,,	—	—	—	—	+	,,
81	L., Delusional.	—	—	—	—	+	,,
82	C., Imbecility.	—	—	—	—	+	,,
83	I., Epil. imbecility.	—	—	—	—	+	,,
84	J. F., Delusional.	—	—	—	—	+	,,
	8/5/13						
97	J. H., Gen. par. (No. 62).	—	C.S.F. trace.	—	—	Pure C.S.F. ++	,,
98	L., Imbecile.	—	,,	—	—	+++	,,
99	H. R., Gen. par.	—	,,	—	—	+++	,,
100	C. B., ,, ,,	—	,,	—	—	+++	,,
101	E. L., ,, ,,	—	,,	—	—	++	,,
102	M., ,, ,,	—	,,	—	—	+++	,,
103	B., Delusional.	—	,,	—	—	+++	,,
104	Salt solution (control).	—	—	—	—	0	,,
	16/7/13						
137	A. W., Subacute dem. præcox.	++	—	++	—	—	Rabbit 2 of M.R.
138	R., Epil. dem.	—	—	++	—	—	,,
139	W., Gen. par.	—	—	++	—	—	,,
140	R., Chr. dem. præcox.	—	—	++	—	—	,,
141	T., Chr. dem. præcox.	—	—	++	—	—	,,
142	A. D., Acute melan.	—	—	++	—	—	,,
143	V., Chr. dem. præcox.	—	—	++	—	—	,,
144	F. W., Acute mania.	—	—	++	—	—	,,
145	H., Senile dem.	++	—	++	—	—	,,

TABLE XVI.—(*Continued.*)

No.	Patient and disease.	Degree of dilution of patient's serum.					Anti-serum used.
		1/100	1/500	1/1000	1/10,000	1/20,000	
	13/8/13.						
146	**J. W.**, Gen. par.	—	—	+	—	—	Rabbit 2 of **M.R.**
147	**W. B.**, Acute dem. præcox.	—	—	+	—	—	,,
148	**M. R.**, Chr. dem. præcox (homologous).	—	—	+	—	—	,,
149	**M. S.**, Chr. dem. præcox (homologous).	—	—	+	—	—	,,
150	**M.**, Chr. melan.	—	—	+	—	—	,,
151	**J. M.**, Chr. delusional.	—	—	+	—	—	,,
	1/8/13.						
152	**J. W.**, Gen. par. (homologous).	++	—	++	—	—	Rabbit U of J.W.
153	**M. R.**, Chr. dem. præcox.	++	—	+	—	—	,,
154	**A. P.**, Rec. delusional.	++	—	+	—	—	,,
155	**H.**, Senile dem.	++	—	+	—	—	,,
156	**W. B.**, Gen. par.	++	—	++	—	—	,,
157	**L. M.**, Subacute mania.	++	—	++	—	—	,,
158	**A. H.**, Rec. melan.	++	—	+	—	—	,,
159	**W. R.**, Chr. melan.	—	—	+	—	—	,,
160	**T.**, Chr. dem. præcox.	—	—	+	—	—	,,
161	**M. W.**, Acute mania	—	—	++	—	—	,,
162	**E. W.**, Epil. dem.	++	—	+	—	—	,,

Remarks.—No. 3.—0·2 c.c. antiserum. Nos. 3 to 8.—Equal also results in all cases from No. 3 to No. 8 inclusive with antiserum obtained from a healthy person. Nos. 59, 60, and 61.—C.S.F. used instead of serum in these three. No. 102.—Remission.

The amount of precipitate, estimated by the eye, recorded as "trace," "+," "++," "+++."

C.S.F. = Cerebro-spinal fluid.

formed—10·6 per cent., or in 10 out of 94 instances. This illustrates the difficulty one meets with in the attempt to obtain information about precipitins; their production is most tedious and capricious, and not subject to control; dependent, in fact, upon individual qualities of the animals employed, of which one knows nothing. Fully grown rabbits, well nourished, weighing from 1800 to 2000 grammes, should be employed. It is seen that a precipitin was mostly obtained after injection of from 8 to 12·5 c.c. of serum, and that when the latter amount is exceeded the prospect of obtaining precipitin is small; in fact, it is not worth while to continue with the injections when no result is obtained with, say, 15 c.c. The loss of weight shown in individual instances was very considerable in the majority of the rabbits, and of 89 in which the weight was taken weekly during the inoculations, 73, or 82 per cent., lost weight. A table omitted for reasons of space shows the losses and gains in weight in those animals in which a precipitin resulted and in those in which it did not. Whereas only 1 out of 10 of the former class (10 per cent.) showed a gain in weight, 15 out of 79 of the latter (19 per cent.) showed such. I now produce portions from a table showing the results obtained by the addition of rabbits' antisera to the diluted sera of various kinds of insanity. (Table XVI.)

The points brought out in the complete table are these: seven antisera, from rabbits inoculated with serum from cases of dementia paralytica and dementia præcox, were employed against the sera of 173 patients in dilutions varying from 1 : 100 to 1 : 20,000. These patients illustrated many kinds of insanity—two exceptional cases (Nos. 7 and 8) were those of sane persons with florid syphilis, for trial with antiserum from a general paralytic. Each antiserum was put against the serum of the patient by the injection of which it resulted, also against that of patients with the same disease, and against sera of patients with other kinds of insanity. The results were estimated by naked-eye observation. (Uhlenhuth's special tubes were used throughout.) From these it is to be gathered that a given antiserum produces the same amount of precipitate, whether it be put against the actual serum by which it was produced, the serum of patients suffering from the same disease, or the serum of patients suffering from other kinds of insanity. And this obtains for the various dilutions employed. In cases Nos. 3 to 8 inclusive equal results were obtained (in the different conditions mentioned) with antiserum from a general paralytic and from a healthy person. In ten cases antiserum from a general paralytic was put against cerebro-spinal fluid from general paralytics, an imbecile, and a case of delusional insanity, in a dilution of 1 : 500. Either no precipitate or a mere trace resulted and without distinction as regards amount. With the pure cerebro-spinal fluid abundant precipitate resulted, but again without distinction. Evidently the reacting body is much less in amount in this fluid than in the serum.

Another way in which the question can be decided, as to whether additional or specific substances (precipitins) are produced in rabbit's serum by the injection of the serum of persons suffering from disease, over and above the normally resulting precipitin, is as follows: (*a*) the serum of the diseased person is first saturated with "normal" antiserum (i.e., serum from a rabbit inoculated from a healthy person); (*b*) the rabbit's antiserum which has been produced by inoculation from such diseased person is in like manner saturated with "normal" serum (i.e., serum from a healthy person), the precipitates which result are filtered off; and (*c*) the filtrates are brought together. This appears to be theoretically sound, but in practice I found in respect to (*b*) as follows (Table XVII.):—

TABLE XVII.

Normal person's serum.	Against rabbit antiserum "W" from a general paralytic.	Result.
Pure. 0·1 c.c.	$\frac{1\ :\ 500}{1\cdot5\text{ c.c.}}$	No precipitate; slight opalescence.
,,	Against rabbit antiserum from a normal person. (As control) $\frac{1\ :\ 500}{1\cdot5\text{ c.c.}}$	,,

The experiment was repeated, using 0·2 c.c. of the normal person's serum and 2 c.c. of the antiserum of the two rabbits; the result was the same. So that I was unable to proceed on the theoretical lines mentioned, but had to content myself with carrying out (*a*) of the above, filtering and adding the "psychosis antiserum" without prior treatment, with the results which are shown in Table XVIII.

TABLE XVIII.—*Added to 3 c.c. of Dilution 1 : 1000 of Serum.*

"Normal" rabbit antiserum, titre 1 : 20,000.	H. Dem. præcox.	K. G.P.I.	Bl. Dem. præcox.	Bd. G.P.I.	P. Chr. mania.	Br. Epil. dem.	Remarks.
0·2 c.c. pure.	+	+	+	+	+	+	Same in all.
0·2 c.c. ,,	+l.	+l.	+l.	+l.	+l.	+l.	,,
0·2 c.c. ,,	sl.+	sl.+	sl.+	sl.+	sl.+	sl.+	,,
0·1 c.c. ,,	,,	,,	,,	,,	,,	,,	,,
0·1 c.c. ,,	v.f.+	v.f.+	v.f.+	v.f.+	v.f.+	v.f.+	
Precipitate filtered in all of the above.							
"Psychosis anti-serum" W., from a G.P.I. added 0·2 c.c.	—	—	—	—	—	—	—

l. = Less. sl. = Slight. v.f. = Very faint.

The inferences to be drawn from the results shown in Tables XVI. and XVIII. are that specific precipitins are not obtained by the inoculation of rabbits with the serum of insane persons; that all precipitable substance in such serum is brought down by the precipitin present in "normal" rabbit antiserum, so that no further result is obtained when antiserum from a case of insanity is subsequently added. These being the results I obtained, it remains for me to mention that Geissler, in cases of the hebephrenic and katatonic varieties of dementia præcox, obtained, by the filtration method alluded to, a precipitate over and above the normal one, and which, therefore, was specific; at least, so I understand his account. This was in 1910. Geissler's results have not been confirmed that I am aware of, and it is highly probable his work has not been repeated, having regard to the difficulties in the way of such work.

TABLE XIX.—*Complement Deviation with Sera of the Insane (Rabbit Antiserum as "Antigen") Hæmolysis + or* 0.

Antigen, serum from rabbit.	R. Dementia præcox.				B. Dementia præcox.				W. G.P.I.				M. Delusional.				P. Acute mania.				M. Acute mania.			
	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/10,000	1/100,000	1/1,300,000	1/10,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000
(1) R 2 (from a case of dem. præcox). 1 in 20.	00 (The provocative serum for R 2.)	0	s.r.	+	00	0	+	+	00	0	s.r.	s.r.	00	0	r.	r.	00	0	s.r.	+	00	r.	s.r.	+
(2) U (from a case of dem. para.). 1 in 10.	0	+	+	+	00	+	+	+	00 (The provocative serum for U.)	+	v.s.r.	+	00	v.s.r.	+	+	00	v.s.r.	+	+	00	v.s.r.	+	+
(3) Normal rabbit. 1 in 40.	+	+	+	+	+	+	+	+	+	+	s.r.	+	+	+	+	+	+	+	+	+	+	+	+	+
Controls without antigen.	+	—	—	—	+	—	—	—	+	—	—	—	+	—	—	—	+	—	—	—	+	—	—	—

Antigen, serum from rabbit.	M. Delusional insanity.				M. Mania.				S. Dementia.				R. Dementia præcox.				B. Dementia præcox.				W. G.P.I.			
	1/1,000	1/10,000	1/100,000	1/1,000,000	1/1,000	1/10,000	1,/100,000	1/1,000,000	1/1,000	1/10,000	1/100,000	1/1,000,000	1/1,000	1/10,000	1/100,000	1/1,000,000	1/1,000	1/10,000	1/100,000	1/1,000,000	1/1,000	1/10,000	1/100,000	1/1,000,000
(1) U (from a case of dem. para.). (1 in 5.)	00	0	r.	0	00	00	r.	s.r.	00	00	r.	s.r.	00	00	m.r.	s.r.	00	00	s.h.	s.r.	00 (The provocative serum for U.)	00	v.s.r.	s.r.
2) R 2 (from a case of dem. præcox). (1 in 5.)	—	00	00	v.s.h.	00	00	00	s.h.	00	00	00	s.h.	00 (The provocative serum for R 2.)	00	00	00	00	00	v.s.h.	v.s.h.	00	00	00	s.r.
(3) Normal rabbit. (1 in 10.)	—	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Controls (without antigen).	—	+	—	—	—	+	—	—	—	—	+	—	—	—	+	—	—	+	—	—	+	—	—	—

Antigen, serum from rabbit.	H. G.P.I.					B, Dementia præcox.					F. Dementia præcox.					T. Acute mania.				
	1/10,000	1/100,000	1/1,000,000	1,10,000,000	1/100,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/100,000,000	1/10,000	1/100,000	1/1,000,000	1/10,000,000	1/100,000,000	1/10,000	1,100,000	1/1,000,000	1/10,000,000	1/100,000,000
(1) W (from a case of dem. para.). 1 in 30.	0	0	0	0	0 a.c.	0	0	0	v.s.r.	s.r.	0	0	0	0	0	0	0	s.r.	s.r.	s.r.
(2) Normal rabbit. 1 in 10.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
(3) Controls.	—	+	+	0	+	—	+	+	+	+	—	+	+	+	+	—	+	+	+	+

00 = Total and complete deposition of red corpuscles. r. = Retarded. s.r. = Slight retardation. v.s.r. = Very slight retardation. m.r. = Much retarded. p.h. = Partial hæmolysis. s.h. = Some hæmolysis. v.s.h. = Very slight hæmolysis. a.c. = Almost complete.

DEVIATION OF COMPLEMENT EXPERIMENTS.

We determined in the next place to experiment with a view to ascertaining whether, by the method of complement deviation, any specificity of reaction between a rabbit antiserum and the serum of the case of insanity by which it was produced, and allied sera, could be found. Such a test is much more delicate than a precipitin reaction. For the purpose of this test the rabbit antiserum was, for convenience, regarded as the "antigen," the patient's serum as the "amboceptor." Guinea-pig's complement was used, and the usual hæmolytic serum, sensitised to sheep's corpuscles. The titre of the "antigen," complement, and hæmolytic serum was ascertained, as for the Wassermann test. As a control "antigen" the serum of a normal uninjected rabbit was employed. A further control was instituted, as in the Wassermann test, by omitting "antigen" in one or more tubes in the case of each of the sera tested. The complement was of course destroyed in the case of all the sera, whether of rabbit or of patient. After a considerable number of preliminary experiments three sets of reliable results (with three antisera) were obtained, and these I show in Table XIX.

The extraordinary delicacy of this test is apparent, especially from the last case in the table, which shows complement deviation in two instances with dilutions of 1:100 million. There is, however, no specific complement deviation with the highest dilutions of the patient's serum, so that the test will not serve for purposes of differentiation. But here again the results recorded by Geissler are out of accord with those I record, inasmuch as he obtained deviation of complement of a specific kind in the case of serum of the hebephrenic and katatonic varieties of dementia præcox.

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SURGICAL AID SOCIETY.—The Lord Mayor of London presided last week over the annual general meeting of supporters of the Surgical Aid Society at the Mansion House. He stated that the society during its 50 years' work had distributed 856,696 appliances. A vote of thanks was passed to Sir Frederick Treves, who has resigned the post of honorary consulting surgeon.

A METHOD OF TREATING THE SAC IN THE RADICAL CURE OF FEMORAL HERNIA.

BY J. PHILIP BUCKLEY, M.A., B.C. CANTAB.,
M.S. LOND., F.R.C.S. ENG.,
HONORARY ASSISTANT SURGEON, MANCHESTER ROYAL INFIRMARY.

THE following method of dealing with the sac of a femoral hernia is so simple, in my opinion so efficient, and so completely obliterates the sac, the obliteration of which is the most essential step in any operation aiming at a radical cure, that I feel I need offer no excuse for describing the operation in detail, especially as, so far as my reading of surgical literature goes, I have not seen this method described. During the last three years I have performed this operation some 30 times. I have no statistics to offer, but the fact that no patient has returned to me with a recurrence is significant. In cases which I have had an opportunity of examining some time after the operation I have been very satisfied with the apparent efficiency of the cure.

FIG. 1.

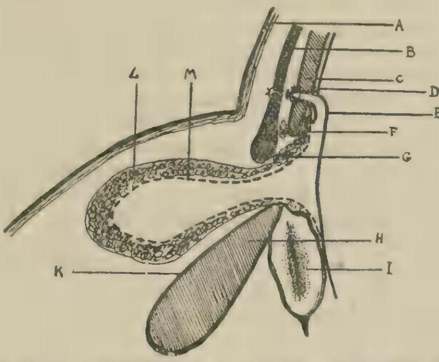


Diagram showing sagittal section through crural canal and femoral hernial sac, and demonstrating the sac before and after invagination. A, Skin. B, Aponeurosis of external oblique. C, Internal oblique and transversalis conjoined. D, Parietal peritoneum. E, Invaginated sac ligatured and fixed. F, Spermatic cord. G, Poupart's ligament. H, Pectineus muscle. I, Horizontal ramus of pubis just external to symphysis. K, Pectineal fascia. L, Fatty covering of peritoneal sac. M, Sac *in situ* before invagination.

My method of procedure is as follows:—

1. The skin incision is made, commencing about 1½ inches above the inner end of Poupart's ligament and vertically above the crural canal, extending down to 1½ inches below the external opening of the canal and having a slight convexity outwards. I prefer the external convexity in that it gives more room and removes the suture line further from the genital organs than does the ordinary straight vertical incision.

2. The hernial sac, covered by its layer of properitoneal fat, is exposed and thoroughly separated as far as the opening of the crural canal into the thigh.

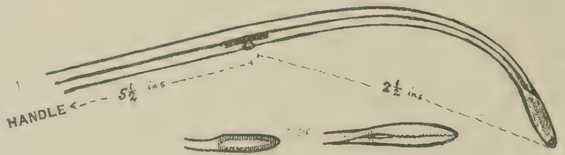
3. The upper end of the wound is held open by retractors, the surface of the aponeurosis of the external oblique muscle cleaned and an incision made in it parallel to its fibres about 2 inches long and ½ inch above the external ring of the inguinal canal. The conjoined tendon is thereby exposed.

4. The properitoneal fat, covering the true sac of the hernia, is now removed as completely as possible.

5. An opening is made with scissors at the apex of the sac, the contents, if any, are reduced, and

any adhesions separated. The edges of the sac are held apart by Spencer Wells forceps, and the forefinger is passed through the crural canal into the abdominal cavity. If the crural canal is too small to allow the passage of the forefinger then the little finger is used. I have met with cases where before the little finger could be passed I have had to insert the blades of a Spencer Wells forceps and dilate the neck of the sac by gently separating the blades. The finger when passed is flexed forwards so that the tip presses against the conjoined tendon. A pair of closed curved "catch" forceps (see Fig. 2) is passed along the flexor surface of the inserted finger until the tip of the forceps is against the conjoined tendon; the tip of the forceps is pushed through the conjoined tendon, and appears at the upper end of the skin incision. The opposed surfaces of the blades of the forceps are grooved, the better to hold a closed pair of Kocher's hernia forceps, the tips of whose blades are now inserted between the blades of the curved forceps. The latter are withdrawn with the Kocher forceps in their grip, so that the blades of the latter forceps appear at the opening at the apex of the hernial sac. The passage of the finger through the crural canal is important at this stage, as thereby the danger of injuring or nipping intestine or omentum by the blades of the forceps is avoided.

FIG. 2.



6. The edges of the sac are then caught between the blades of the Kocher forceps and the sac is pulled inside out, appearing through the conjoined tendon. This manœuvre is carried out gently but firmly, and the peritoneal lining of the crural canal is stripped completely away from the canal and invaginated together with the sac of the hernia.

7. The sac is transfixed with a full-curved needle, threaded with catgut, close to the conjoined tendon, ligatured, and then cut away. One end of the catgut is again threaded and the needle passed through the conjoined tendon on one side of the stump, through the stump itself and through the tendon on the other side of the stump, and the two ends tied, the stump thereby being fixed to the conjoined tendon, and retraction being prevented.

8. The slit in the aponeurosis of the external oblique muscle is closed with a continuous catgut suture; the pectineus muscle and fascia are brought into apposition with Poupart's ligament by a stout catgut suture; the skin incision is closed with silkworm gut, and a gauze dressing and firm spica bandage applied.

In practising this operation it is at once obvious that it is necessary to use forceps with curved blades for pushing through the conjoined tendon, since it is difficult, especially in a patient with a fat thigh, to tilt the blades of a straight forceps forward through the tendon. I have not yet encountered a case where I could not perform the manœuvre of invagination with ease. The only obstacle has been in some cases the narrowness of the neck of the sac hindering the passage of the finger. This has been overcome without difficulty, as I have described. The features of the operation are that the crural canal is entirely denuded of peritoneum, and that there is no pit left at the site of the crural canal which may act as the commencement of another hernial sac. On the contrary, the invagination produces a prominence towards the abdominal cavity. The recurrence of the hernia is further hindered by the fixation of the invaginated sac to the conjoined tendon.

On one occasion recently, when I was operating on a case of double femoral hernia in a female patient, I felt, on passing my finger through the right crural canal into the abdominal cavity, a freely movable body of about the size of a nectarine. On opening the abdomen to remove what proved to be a pedunculated fibroid of the uterus I took the opportunity offered to observe the invagination of the sac from within the abdominal cavity, and the appearance was entirely satisfactory.

A similar method may be used in cases of direct inguinal hernia by invaginating the sac upwards and inwards through the outer border of the rectus abdominis muscle. In one case upon which I operated with excellent result—viz., in a case of right direct inguinal hernia in a man who also had a femoral hernia on the same side—I invaginated the sac of the inguinal hernia through the rectus and the femoral sac through the conjoined tendon. The two sacs thus crossed one another obliquely.

Manchester.

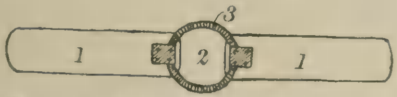
A TREATMENT FOR PROLAPSUS ANI IN YOUNG CHILDREN.

BY WILLIAM GEMMILL, M.A., M.B., CH.B. EDIN., F.R.C.S. ENG.,
LATE DEMONSTRATOR OF ANATOMY, UNIVERSITY OF EDINBURGH.

IT must be clearly understood that the following method deals entirely with the prolapse *per se*, and is not concerned with the exciting causes of that condition, local and general, which must in addition receive their adequate and special treatments. This method of retaining a prolapsus ani in a young child was first tried more than two years ago. It was used without much hope of success in a case of complete prolapse which had resisted all the ordinary methods of retention, including strapping of the buttocks; consequently it was with considerable surprise that I heard the report on the following morning that no prolapse had occurred in the interval. Since this first case the method has been used in several other cases of varying degrees of severity and always with immediate relief of the condition.

The considerations which led me to attempt this treatment were as follows. Normally, when the child defæcates he assumes a position in which the forces accessory to the expulsive contraction of the great bowel (the main factor in defæcation) may act to greatest advantage. The thighs are flexed and pressed on the anterior abdominal wall. The spine is curved with concavity forwards, the pelvis tilting, so that the iliac crests almost reach the costal margins. The position thus assumed of itself decreases the capacity of the abdominal cavity, but it also is a position in which the abdominal muscles, contracting to great advantage and with great force, still further decrease that capacity. Furthermore, when the thighs are flexed on the abdomen two additional results are obtained; firstly, the soft parts of the buttocks and thighs are removed from the region of the anus, thus a great support to the pelvic floor and anal canal is withdrawn, and the anus, instead of being a deeply embedded hidden orifice, comes to lie on the surface without support; secondly, the skin and subcutaneous tissue round the anal orifice are partly stretched, and the external part of the external sphincter is also stretched and put into a disadvantageous position for contracting efficiently. Hence it is evident that the normal position for defæcation is entirely satisfactory for the exercise of that function, and for the same reasons is favourable to the occurrence of prolapse, decreasing as it does the abdominal capacity, increasing the pressure within, and at the same time weakening the supports of the outlet.

These accessory forces, while of great advantage in defæcation in normal health, are of decided disadvantage in the treatment of prolapse, and especially is this the case when the prolapse is complete, in which type the accessory forces are doubtless the chief expelling factors. The principle then in treatment is to remove these forces as far as possible, and to bring about a condition in which the abdominal capacity responds passively to the decrease in contents brought about by the evacuating contractions of the large bowel, and is not actively decreased by the strength of the accessory forces. This is attained simply by preventing the flexion of the thighs and spine. A straight wooden splint, well padded and covered with mackintosh, is applied to the back of the child of a length to reach from the neck to the heels, and the child is fixed to the splint by two bandages, one round the thorax and the other round the lower limbs. More recently I have been using a similar splint with a hiatus in the region of the anus bridged by a circle of iron, as shown in the diagram. This allows defæcation without soiling of the splint, and also easy access for such local treatment as cold douching, &c. The result obtained is that the extended position of the child prevents the action of the accessory forces in great part, for the abdominal muscles are placed at a disadvantage for contracting. This position also prevents the decrease in abdominal capacity from flexion, as explained above. Hence evacuation takes place almost entirely from the muscular action of the great bowel. The removal also of the natural support which the soft parts give to the anal canal and sphincters is prevented, and the splint itself gives additional local support by pressing on the soft parts of the buttocks, from which it follows that the hiatus must not be too large, a condition in which this local pressure would be lost.



Sketch of splint for treatment of prolapsus ani. 1. Wooden splinting. 2. Hiatus for evacuation and local treatment. 3. Iron circle screwed to splint.

The relief which this method gives is immediate, the bowel remaining in the abdomen after reduction from the beginning and no prolapse occurring even during defæcation, for which the splint must not be removed. The advantages are efficiency, simplicity, and a minimum amount of trouble in the management of the child, who soon becomes quite comfortable and happy. The splint may be retained as long as is necessary for the child to regain health, for the sphincters to retain tone, and for a normal condition of the parts to return.

The Infirmary, Cleveland-street, W.

A CASE OF DELAYED CHLOROFORM POISONING.

BY H. P. FAIRLIE, M.D. GLASG.,
ANÆSTHETIST TO THE ROYAL AND WESTERN INFIRMARIES, GLASGOW.

THE following case of delayed chloroform poisoning is of interest for two reasons: (1) its late onset and (2) its rapid course.

The patient, a young woman aged 24, spare and rather nervous, was admitted to a nursing home on June 29th, 1914. During the two days which elapsed before operation her temperature was about 99° F. and her pulse about 80 per minute. Her heart and lungs were normal. The urine was acid and clear, had a specific gravity of 1030, and contained neither albumin nor sugar. On July 1st a laparotomy was performed; double tuberculous pyosalpinx was found, along with diffuse tuberculous peritonitis in the pelvis. During manipulation one Fallopian tube ruptured. Both were removed, and the wound was closed with drainage. The administration of the anæsthetic commenced at 3 P.M. and lasted for 38 minutes. Chloroform was administered throughout, during the first nine minutes on a Schimmelbusch mask, and then by the Vernon-Harcourt inhaler. Owing to the patient's nervousness the induction was protracted and three drachms of chloroform were given on the mask. Thereafter the anæsthesia was well maintained by the Vernon-Harcourt inhaler at 2 per cent. until five minutes before the end of the administration, when 1·8 per cent. sufficed; 5½ drachms of chloroform were given by the inhaler. The anæsthesia was satisfactory, with complete relaxation. On return to bed the patient's condition was good, the pulse 100 per minute and of good volume. During the next two days she progressed favourably, and with the exception of pain and attacks of hiccough made no complaint. Thirty-six hours after operation she vomited a small quantity (about an ounce) of brownish fluid. Forty-eight hours after the operation the dressing was stained and the wound dressed. A dose of castor-oil was ordered five hours later, but when an attempt was made to administer it at 8 P.M. on July 3rd—i.e., 53 hours after operation, the patient refused it, clenching her teeth and behaving in a peculiar manner. Although no characteristic symptoms appeared till next morning, when vomiting commenced, this seems to have been the first indication of the presence of acidosis, and during the night of July 3rd she seemed dull and stupid. Sixty-five hours after the operation vomiting of small quantities of brownish, coffee-ground fluid commenced and continued at frequent intervals. The patient was now comatose. Bicarbonate of soda and glucose were ordered in four-hourly doses per rectum, but no improvement resulted. The coma deepened, and along with this the face flushed and the pupils dilated, a decided odour of acetone appeared in the breath, and traces of acetone and albumin were found in the urine. Seventy-two hours after the operation Cheyne-Stokes respiration developed, the patient gradually sank, her temperature rose to 105·8°, and death took place nine hours later, about 24 hours after the onset of acidosis. A post-mortem examination was not obtained.

This case, although presenting many of the typical features of delayed chloroform poisoning, is of interest from the fact that definite symptoms did not develop for considerably more than 48 hours after the administration. Buxton[1] gives the usual time of onset as from 12 to 42 hours, and Hewitt[2] from 10 to 48 hours after anæsthesia. After the onset of symptoms the case ran a very rapid course, persistent vomiting commencing only 16 hours before the end. Owing to the employment of the Vernon-Harcourt inhaler the amount of chloroform administered was small relative to the length of anæsthesia, the importance of which Buxton[3] emphasises.

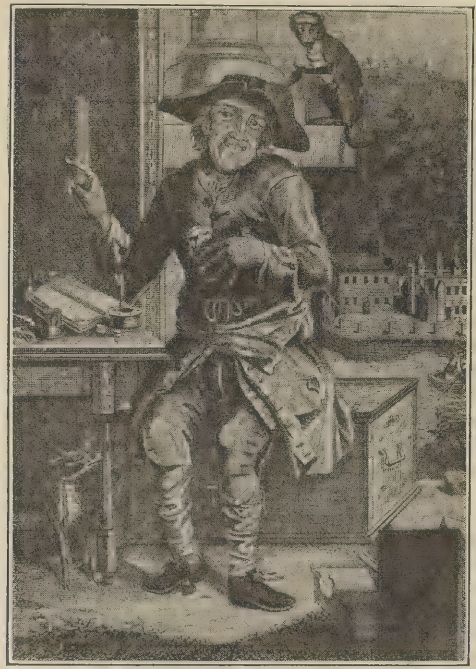
Glasgow.

A CASE OF ACROMEGALY 200 YEARS AGO.

BY LEONARD MARK, M.D. DURH.

IN the early Georgian period there lived at Scarborough a man named Richard Dickinson, of whom it is recorded that the singularity of his figure contributed to bring him into great notice among the gentry and others who visited Scarborough Spa, where he followed the double occupation of shoe-cleaner and vendor of gingerbread. He did not escape the notice of painters and poets of his time, and there are not less than seven original resemblances of him preserved by different artists, and copies of the same innumerably multiplied.

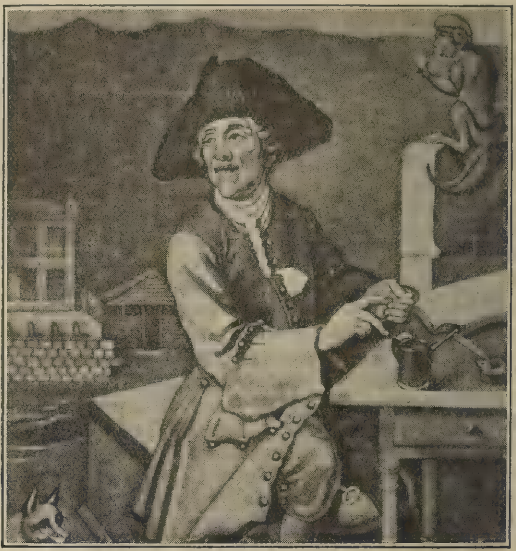
FIG. 1.



Richard Dickinson. (From a print dated 1726.)

Dr. Everley Taylor, of Scarborough, who is well known for the great interest he takes in all local and antiquarian matters, was reading "Acromegaly: a Personal Experience," when his attention was drawn to the fact that some of the peculiarities of this rare disease were to be found depicted in these portraits of Dickie Dickinson, and that we may have here the earliest representations of an acromegalic to be found in England. Some of the features of the disease are repeated in several of the pictures, so that it cannot be due to accident or faulty drawing if the various artists display these several peculiarities.

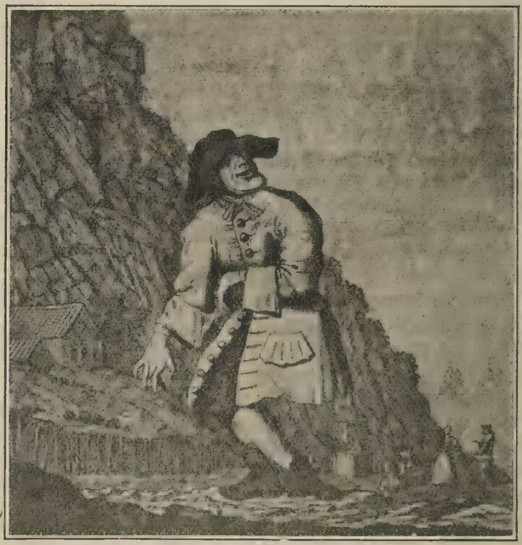
FIG. 2.



"Richd. Dickison." (From a contemporary mezzotint.)

We find the striking acromegalic facies in Fig. 1 The most obvious peculiarity is the very large lower jaw, depicted in five of the prints. This is accompanied by lengthening of the face and pronounced naso-labial folds. In one picture (Fig. 3) the marked prognathism gives the face the peculiar curve, concave from above downwards. In all the pictures the lips are large and prominent, leaving the mouth open and the teeth conspicuous. The massive chest with broad shoulders and the neck

FIG. 3



"Mr. Richard Dickinson of Scarborough Spaw."

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[1] Dudley Buxton: Anæsthetics, p. 299.

[2] Sir Frederick Hewitt: Anæsthetics and their Administration, p. 639.

[3] Loc. cit.

buried between them, seen in Fig. 3, is a well-marked peculiarity, the one generally represented in *Punch*. The other symptoms which give the disease its name (acromegaly, big ends) are to be found in the large hands and feet in some of the pictures. The fingers are increased in length but not in breadth (Pierre Marie's *type en long*) (Fig. 2). In two pictures the feet are large and everted. The knock-knee and the bent-up condition of the lower extremities seen in all the pictures is due to some paralysis. The patient has probably in childhood suffered from rickets. He really seems to suffer from a variety of complaints, including some rheumatic affection of his left hand. The ulnar deflection is well depicted. (Fig. 1.)

The writer is indebted to Mr. Meredith T. Whittaker, J.P., of Weaponness Park, Scarborough, for the loan of five pictures and for the trouble he has taken in kindly supplying information about this curious individual. Mr. Whittaker has a very large collection of pictures and prints connected with Scarborough, and being most interested in the fact that possibly the earliest representations of a rare disease, only recognised of late years, are to be found at Scarborough, he has been good enough to write:—

> I send you five portraits of Dickinson. I think the etching best answers your purpose. I have the companion to it framed showing Dickie seated on his chest and his head tilted sideways, which displays the enormous length of his jaw. Probably the pictures vary on account of the portrait being drawn at different periods of the disease. I do not know the date of the etching. I have a copy of the one by Virtue; this was issued in 1725.
>
> Dickie had a trip to London, and it was probable on that occasion when he was painted.
>
> Settrington, who was a local bookseller, published a portrait of him in 1726, which I send. The two mezzotints are rare and one is in excellent preservation. These appear to me to be copied from Hysing, although the position is altered. Dickie was born in 1670; he was appointed as governor of the Spa in 1700, and had charge of the lavatories. He was probably of a low type of mind of an immoral age. According to the pictures his house was one of good class, and I have seen it recorded that it was showily furnished. The landslide of February, 1737–8, would cause his property great damage, and he apparently never got over the shock, and he died some time in 1738. His age would be 68.

It is interesting to think that we have here, perhaps, the earliest representation of an acromegalic to be found in England. Some earlier ones have been recognised on the continent—for instance, the portrait of a "giant" at the court of the Elector of the Palatinate, Frederick II., preserved in the Ambras-Schloss in the Tyrol, painted life size in 1553 by his court painter.

Another of still earlier date, of special interest at the present moment, is a carved figure of a woman, dating from the thirteenth century, which was placed high up on one of the flying buttresses of Reims Cathedral. This statue has been described as pointing out in a striking way the physical characteristics of acromegaly. As it stood on the north side of the cathedral, which was the one which suffered least from the early bombardment, there were hopes that it had been spared. At the moment of writing, however, the account of a renewed bombardment of Reims leaves one little hope that this interesting relic of the past, after weathering the storms of seven centuries, is not now to be reckoned amongst the innocent victims who have fallen before the spread of German Kultur.

Oxford-terrace, Hyde Park, W.

TRIGGER FINGER, ITS CAUSE AND MECHANISM.

BY ADONIRAM B. JUDSON, M.D.

A PROFESSIONAL man, 76 years old, had an attack of arthritis in the fingers of both hands in June, 1913, with resulting trigger finger in the proximal phalangeal joint of the middle finger of the right hand, with swelling and deformity, and stiffness of the joints of the middle and ring fingers. These results are still present. Motion past the right angle in either flexion or extension develops a painful snap or jerk. This may be described as a momentary hesitation, followed by a sudden acceleration. The jerk is more severe after the joint has been undisturbed for some time, and especially on waking in the morning. After it has been repeated a number of times for experiment or observation it is painless and comparatively slight. It is never entirely absent. When the hand is quiet there is no pain except what is felt in chronic arthritis on pressure or when motion is forced beyond the point of comfort. Many of the uses of the hand are interfered with. A pencil cannot be sharpened in the usual way by flexion and extension of the fingers. It also impedes writing and sewing. A woman thus affected said that a needle in her fingers seemed as large as a pencil. Other manual movements are at times brought to a sudden stop in a surprising, inconvenient, and more or less painful way. The momentary pain is sometimes very severe.

Cases of this kind have been occasionally reported, and they have given rise to an extensive "literature" devoted largely to cause and mechanism. The peculiar action of a trigger finger resembles that seen when a pocket-knife is opened or shut. Movement is smooth till a square shoulder at the near end of the blade presents an obstacle which retards motion till a certain point is reached when motion is accelerated with a jerk. A counterpart of this obstacle may be found perhaps in a node on an articular surface where it would cause the halting action of a trigger finger. In the construction of a knife, however, an important feature is present which is absent from the anatomy of the hand, and that is the strong steel spring concealed in the handle of the knife. It produces positive pressure between the surfaces composing the metallic joint. If the spring were absent, or if its place were taken by a strip of some inert substance like cork, there would be no jerk, and shutting and opening the knife would be perfectly smooth. While there is nothing very closely resembling a steel spring in the hand or forearm, still we may find in muscular action a force which draws the surfaces together and creates a pressure comparable with that produced by the steel spring.

The fingers require not only delicacy and swiftness, but also strength. Small in bulk and weight, and far removed from the point of resistance in the inertia of the trunk, they still are endowed with great strength. Their power comes from important groups of muscular fibres assembled in the mass of the forearm. The long tendons of one set, the flexor sublimis, are inserted in the bases of the second phalanges. They make pressure on the articular surfaces, especially those of the nearest joint, the affected one in the case here reported, pressure augmented by the pull coming from the other group, the flexor profundus, whose tendons pierce those of the sublimis to be inserted in the distal phalanges. These tendons are bound to the phalanges by fibrous sheaths, and as they lie close to the bones and parallel with them a large part of their force is expended in pressing the articular surfaces together, the residue being given to moving the joint.

Motion is doubtless impeded by intra-articular irregularities in other parts of the body where joint surfaces are held in contact by the static resistance of circumarticular ligaments and to some degree by the dynamic influence of muscular contraction. No joints, however, but those of the digits are subject to the exceptionally great pressure of powerful muscles acting through tendons lying parallel to, and in close contact with, long bones. It is clear that when digital muscles are in action they concentrate on small articular surfaces pressure as positive and distinct as that made by the steel spring of the pocket knife.

After witnessing the dissection of a normal hand, by the kindness of Dr. Gallaudet, it appeared to me that the node present on the radial side of the base of the second phalanx of the middle finger of the affected hand might extend into the joint, where it would project as an obstacle on the palmar edge of the articular surface at the base of the phalanx. At this point it would be in apposition, when the joint is at a right angle, with the rounded lateral articulating condyle on the radial side of the head of the proximal phalanx. It is evident that when these two eminences, one abnormal and the other normal, pass each other, as they do when the joint traverses a right angle, they must, when pressed together by muscular contraction, experience a momentary hesitation followed by an acceleration of speed such as is seen in trigger finger. That there may be cases which do not have their origin in arthritis is suggested by the personal experience and research of my frinds, Dr. Weir and Dr. Abbe.

It is surmised that as the flexors are stronger than the extensors the jerk of trigger finger would be more severe in flexion than in extension. This is found to be the case. And further, it is found that the jerk is lessened or absent when passive is substituted for active motion. These and other experiments are interesting and sustain my proposition to a certain extent, but they are wanting in scientific accuracy and their results are not constant. Aside from these experimental observations the presence of unusual pressure between the joint surfaces when voluntary motion is made by the fingers and the probable presence of a node on one of the surfaces give sufficient warrant to the following proposition. In trigger finger an obstacle of arthritic origin on one of the articulating surfaces is surmounted with momentary hesitation followed by a jerk or sudden acceleration of speed, as the joint moves under the exceptional pressure which voluntary action interposes between the articular surfaces of the digital joints.

X ray views have been taken in this case, but they fail to show any notable change in the bone. Ordinary inspection, however, shows swelling and deformity, with a projection on the radial side of the base of the second phalanx of the middle finger. The joint is an eighth of an inch wider at this point than its fellow of the other hand. Dissection would probably reveal surface irregularity. It is to be hoped, however, that a necropsy will not be proposed in the immediate future, as the joint herein described is part of the still good right hand of the author.

There has been no local treatment except by a gutter splint of sheet aluminium applied with a single strip of adhesive plaster to keep the joint extended at night. At the end of a year the jerk is less marked, but pain and stiffness continue and involve the metacarpo-phalangeal joint. Persistent catharsis has been maintained with oleum ricini, and as a result, perhaps, no other joint of the body has been attacked by the infection which is held to be the cause of chronic multiple arthritis, an affection intractable and as yet not well understood.

New York.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Exhibition of Cases.—Spontaneous Gastro-enterostomy.

A MEETING of this section was held on Dec. 11th, Sir FREDERIC EVE, the Vice-President, being in the chair.

Dr. ALEXANDER MORISON showed a case of Præcordial Thoracostomy for Heart Disease. The patient, a boy aged 16, was stated to have been in good health and capable of athletic exercise until Christmas, 1913. He had played football weekly from October till late in December. He then became breathless and had severe palpitation. No history of rheumatism or scarlet fever was obtainable. He was admitted to hospital in February, 1914, with tachycardia, irregular action of the heart, breathlessness, and a mitral systolic bruit. The area of cardiac dulness was much increased; powerful heaving of left ribs and cartilages from the fourth to the sixth and movement of the sternum were noticed. He was rendered comfortable by rest and taking tincture of digitalis, but without any diminution of thoracic movement, and was discharged in April feeling comfortable. He was told to return if again distressed, for præcordial thoracostomy. He did so in May and was again admitted. The operation was performed by Mr. Mower White in June, when $4\frac{1}{2}$ in. and $5\frac{1}{2}$ in. of the fifth and sixth ribs and cartilages respectively were removed. No costopericardial adhesions were found. Since then he had been comfortable, but still required tincture of digitalis. The object of the operation was to relieve the enlarged heart of the labour of raising the chest wall as well as driving blood.

Dr. ARTHUR F. HERTZ showed a case of Cardiac Achalasia (so-called cardiospasm). The woman, aged 36, had complained for ten years of pain under the lower part of the sternum and a choking sensation under the upper part whenever she ate. She had always had an impression that her food had difficulty in getting into her stomach. About two years ago she fell from a ladder and hit her chest; since then she had constantly vomited part of the food after every meal, and it came up quite undigested, but mixed with a considerable amount of mucous saliva. During the night she frequently woke owing to regurgitation of her evening meal through her nose; the food was now sour, especially if several hours had elapsed since the meal, in contrast to the food brought up during meals, which was never sour. The condition became steadily worse until nine weeks ago, when she ceased to be able to keep down any solid food at all. During the three days before she was seen six weeks ago, no food had been retained at all. An X ray examination showed that the whole œsophagus was dilated, the obstruction being at the cardiac orifice of the stomach. There was violent peristalsis in the œsophagus, but the food only trickled with extreme slowness into the stomach. The condition was diagnosed as cardiac achalasia, and a mercury tube was passed. This met with no obstruction at the cardia, and the patient had since been able to retain her food, unless it was insufficiently masticated, by passing the tube immediately before each meal. The term "achalasia" (α, not; χαλάω, I relax) was coined for him (Dr. Hertz) by Sir Cooper Perry to replace the term "spasm," which was incorrect for the following reasons: (1) Hypertrophy of the cardiac sphincter is never observed after death, even if the obstruction has lasted for 20 or more years, although long-continued spasm would necessarily lead to hypertrophy; (2) the mercury tube passes without any sense of obstruction through the cardia, which would be impossible if a spasm were present; (3) the mercury tube can be withdrawn without any difficulty, whereas it would be grasped by the sphincter were cardiospasm really present. He believed that the condition was due to the absence of the normal relaxation of the cardia, which should occur when each peristaltic wave reached it. Similarly, many cases of so-called pylorospasm were due to pyloric achalasia, and ileo-cæcal achalasia was the most frequent cause of ileal stasis.

Dr. HERTZ and Mr. C. H. FAGGE contributed the notes of a case of Spontaneous Gastro-enterostomy with subsequent perforation and recovery after operation. The patient was a woman, aged 48, who for six years had suffered from indigestion, the pain occurring from one hour to an hour and a half after food. Vomiting and hæmatemesis had been present. In 1913 she had been treated for gastric ulcer. In 1914 she developed sudden violent pain in the epigastrium, and the diagnosis of perforated gastric ulcer was made. At the operation Mr. Fagge found an opening between the stomach and jejunum—i.e., a gastro-jejunostomy had taken place. Secondary perforation had followed. The parts were left *in situ* and protected by suturing the jejunum to the stomach and omentum. She had since left the hospital perfectly well. X rays showed that the stomach was small and emptied after 20 minutes through the gastro-jejunostomy opening, very little bismuth passing through the pylorus.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases.

A MEETING of this section was held on Nov. 27th, Mr. T. H. KELLOCK, the President, being in the chair.

Dr. E. B. GUNSON showed a child with Tooth Erupted at Birth. It was a male infant, one of twins born at full term. The left lower median incisor was erupted at birth. On the tenth day the tooth, which was then loose and attached only by the gum, was removed as its presence interfered with suckling. The right lower median incisor had then also appeared through the gum. The child was well developed and presented no other abnormality. The fellow twin was normal.

Dr. J. PORTER PARKINSON showed a case of Friedreich's Disease with Spastic Phenomena. The boy, aged 13 years, was the ninth of 10 children; his mother's eleventh pregnancy terminated in a miscarriage. For three years before the patient's birth the mother was very depressed and almost insane. The patient was a full-term child, healthy at birth, but before the age of 3 years had scarlet fever, measles, chicken-pox, whooping-cough, and diphtheria. He began to walk at 3 years, but never walked well, and was never very intelligent. He was now a fairly well-grown boy with a rather unintelligent expression. Speech indistinct, slurred and syllabic. Gait spastic, uncertain; slight difficulty in turning. Romberg's sign negative. The legs were held stiffly, the muscles hard and well developed; the foot showed marked pes cavus with some equinus; the great toe was hyperextended at the proximal joint, and the extensor tendon very prominent. There were marked knee and ankle clonus and an extensor plantar reflex. The arms were in every way normal, grasps equal, no ataxy of arms or legs. Cranial nerves normal, no nystagmus, and no changes in the fundi. The spine was normal, and the bladder and rectum not affected. Sensation normal. No similar disease in the family.

Mr. L. BROMLEY showed a case of Tumour of the Upper Extremity of the Femur in a boy aged 12 years. A swelling of the right thigh had been noticed for the previous seven or eight weeks. He complained of pain in the right leg, especially after walking; on some days the pain was so severe that he was unable to walk. When the patient was aged 3 years he was said to have fractured the right femur; since then he had had intermittent pains of an aching character, which had increased lately. On examination a hard swelling of the upper third of the right femur was felt. There was no definite margin, and no heat or tenderness. Movements at the hip-joint were free. A skiagram showed an endosteal growth of the femur. On exploration the bone was found to be expanded and covered by normal periosteum; a thin layer of compact bone surrounded a mass of cartilage which had entirely replaced the medullary cavity. Microscopic examination showed pure chondroma, and there was no suggestion of malignancy.

Dr. T. R. WHIPHAM showed two cases of Heart-block. 1. A female infant, aged 2 years and 2 months. The child was born at full term, and had always been backward. The first tooth was not cut until the age of 9 months, and she did not sit up until she was a year old. Up to the present she has not walked or talked. She was a well-nourished child with a good colour, and presented no clubbing of the digits. The pulse was slow, full, and regular. The right side of the heart in the skiagram appeared to be enlarged, and the outline of the organ was almost globular. All over the præcordium a loud systolic bruit was audible, the maximum intensity being between the apex and the left sternal border and extending up to the pulmonary area. The heart rate was slow, but it varied from time to time, the lowest recorded being 48, and the highest 80. The child was first admitted into the Evelina Hospital with whooping-cough and slight bronchitis, but even then the heart was only beating on the average about 64 per minute, and at times the respirations were quicker than the pulse. Paroxysms of coughing, moreover, caused very little, if any, acceleration of the heart. No cardiac symptoms had at any time been observed. An electrocardiogram showed a perfectly regular 2:1 heart-block. There was a polycythæmia of 8,400,000 red corpuscles per cubic millimetre and the hæmoglobin value was 110 per cent. 2. A girl, aged 12 years. With the exception of measles at an early age she had had no illness. Six years ago it was first noticed that she had a slow pulse, but it was not until 18 months ago that any cardiac symptoms occurred; since then she had complained of pain around the heart on exertion. She was well-grown and showed no cyanosis. The pulse was slow, usually between 50 and 60 per minute, and slightly irregular in rhythm; the extreme rates noted had been 40 and 64. The heart was considerably enlarged, especially on the left side, as seen in a skiagram, and there was a heaving impulse in the fifth interspace well outside the nipple line. A systolic bruit was audible with its maximum intensity in the fourth interspace near the sternum; occasionally at the apex and a little outside a slight diastolic whiff had been heard. The second sound in the pulmonary area was at times reduplicated. An electrocardiogram and a polygraph tracing showed a marked dissociation between the auricular and ventricular beats, and an irregularity in the rhythm of the latter. A subcutaneous injection of atropine sulphate (1/60 gr.) caused the ventricular rate to be increased from 40 to 60 per minute, but did not affect its arrhythmia. The patient at times had complete heart-block with pulse slow and regular, and at times incomplete heart-block of high grade (3:2, 2:1, and mixed) which produced an irregular pulse.

Dr. WHIPHAM also showed a case of Diabetes Insipidus with Infantilism. The patient, a boy aged 4 years, was the sixth child in a family of eight, all of whom had been backward. He was bottle-fed and cut his teeth late, and did not walk until he was 2 years old. He could not yet talk. Height, 2 ft. 9 in.; weight, 1st. 6½ lb. About two years ago he started to pass a large quantity of urine and to complain of great thirst and to lose flesh. On admission to hospital he was passing from 200 to 900 c.c. of urine per diem, but under general treatment and rest the maximum had been 300 c.c. in a day. The urine was very pale, of low specific gravity, and contained no abnormal elements.

Dr. J. D. ROLLESTON showed a case of Giant Nævus. The patient was a girl, aged 7 years, showing a pigmented hairy and warty nævus and numerous accessory nævi. The principal nævus started in front, slightly internal to the anterior border of each sternomastoid, and passed backwards, occupying each posterior triangle of the neck and extending 1 inch below each clavicle. Behind it extended as a continuous sheet upwards to the external occipital protuberance, outwards to the acromion process and downwards to the spine of the twelfth dorsal vertebra, where it ended in a tapering point. The pigmentation of the nævus was dark brown, interspersed with vitiliginous patches, and was interrupted at the periphery by linear areas of unpigmented skin running obliquely downwards and outwards. The skin of the pigmented area was sharply marked off, but was not raised above the level of the normal skin, and showed no sensory changes. There was no spina bifida. The nævus was covered by downy hairs mostly of a light colour, except in the interscapular region, where they were darker. Several warty growths of the same colour as the pigmented skin were present in the cervical and upper dorsal area of the nævus, the largest being situated just below and to the left of the external occipital protuberance. In addition to the principal nævus other nævi were scattered over the rest of the skin. The largest were situated on the right thigh and right buttock. Most of the lesions situated on the limbs were hairy, but a few were smooth. A few smooth nævi were present on the soles, but the palms were free. The fewest and smallest lesions were on the face. There was no hereditary or familial history of similar lesions, but there was a definite history of a maternal impression. During the third or fourth month of pregnancy the mother had been frightened by a black and tan dog which had tried to bite her husband, and had thrown her arms over her head. She had anticipated that the child would be marked, though her medical attendant had tried to persuade her to the contrary.

Dr. **BERNARD E. MYERS** showed a case of Splenomegaly improved by antisyphilitic treatment. The patient, a boy aged 1 year 11 months, was admitted to the Royal Waterloo Hospital last June (then aged 18 months) for diarrhœa and wasting. His weight at that time was 9 lb. 8 oz. His father died two years ago as the result of an accident, and his mother died from phthisis when the patient was a year old. At the age of 4 months the patient had measles. When first examined in June he presented a very wasted appearance all over. His abdomen was distended. The child was listless, anæmic, of an earthy complexion, and with a sunken fontanelle. Some signs of rickets were present. There were about six motions in the 24 hours. The temperature and pulse were normal on admission, while the respiratory rate was slightly raised. The spleen was enlarged, moderately firm, and extended to just below the level of the umbilicus. The edge of the liver was felt 1½ inches below the costal margin. No albumin was discovered in the urine, which was acid and of specific gravity 1020. The Wassermann and von Pirquet reactions were both positive. The blood count on June 17th was :—

Red blood corpuscles	3,040,000 per cubic millimetre.
Hæmoglobin	44·0 per cent.
Leucocytes	14,000 per cubic millimetre.
Polynuclears	35·8 per cent.
Lymphocytes	54·8 ,,
Large mononuclears	6·0 ,,
Transitionals	1·4 ,,
Myelocytes	2·0 ,,
	100·0 ,,
Normoblasts	3·0 ,,
Megaloblasts	1·2 ,,

A provisional diagnosis of splenic anæmia of infancy was made. Hydrarg. c̄ creta, ½ gr. t.d.s., together with a bismuth mixture, was given. Only slight improvement being noticeable, this treatment was stopped in favour of mercurial inunction over the region of the spleen. The diet consisted of milk in various forms, arrowroot, meat-juice, and small quantities of brandy. Distinct and steady improvement followed the inunctions. The diarrhœa gradually ceased and the child's appearance became healthier. The spleen was noticeably smaller week by week. On Sept. 17th he was put on syrup. ferri iodidi, 10 minims t.d.s. On Oct. 9th a blood count showed—

Red blood corpuscles	5,640,000 per cubic millimetre.
Hæmoglobin	90·0 per cent.
Leucocytes	10,000 per cubic millimetre.
Polynuclears	30·2 per cent.
Lymphocytes	53·6 ,,
Large mononuclears	12·0 ,,
Transitionals	4·2 ,,
	100·0 ,,

Red blood corpuscles appeared normal. During his first two months in hospital his temperature was raised on and off. His present weight is 1 st. 4 lb. 12 oz. He looks well and is now a cheerful, intelligent child, and takes ordinary diet. Both spleen and liver are still a little enlarged. He has suffered from catarrh of the lungs, but this is now much better. On Nov. 20th his blood was again examined by Dr. Leathem and his report showed :—

Red blood corpuscles	6,130,000 per cubic millimetre
Hæmoglobin	100·0 per cent.
Leucocytes	16,600 per cubic millimetre.
Polynuclears	57·4 per cent.
Lymphocytes	19·6 ,,
Large mononuclears	16·8 ,,
Transitionals	3·0 ,,
Eosinophiles	3·2 ,,
	100·0 ,,
Normoblasts	1·0 ,,

Red blood corpuscles appeared normal in size and shape. Wassermann reaction positive, although not strongly marked.

Mr. **PHILIP TURNER** showed a case of Double-retained Testicle in which the left testicle was transplanted to the right side of the scrotum and the right testicle to the left side. The patient, a boy aged 12 years, was admitted to hospital for double inguinal hernia with imperfectly descended testicles. Both testicles, which appeared to be ill-developed, could be palpated in the inguinal canals ; they had never descended below the external abdominal rings. The following operation was performed: The right sac and spermatic cord were exposed by a small incision through the external oblique just above the internal abdominal ring. The hernial sac was separated from the vas and veins as far as the internal ring, and there ligatured. By traction on the distal part of the sac the testicle was drawn through the small incision in the external oblique. The sac was then ligatured immediately above the tunica vaginalis and removed. The remains of the gubernaculum were then transfixed, ligatured, and divided, the ends of the suture being left long. The testicle, enclosed in the tunica vaginalis, was now, except for its connexion with the spermatic cord, quite free. An incision about an inch long was then made over the front of the left side of the scrotum. The free ends of the ligature transfixing the gubernaculum were then seized with Spencer Wells forceps, which were then introduced through the incision in the external oblique, pushed along the inguinal canal, through the external ring into the right side of the scrotum. The ends of the forceps were then made to impinge against the scrotal septum. A small incision was now made on the forceps through the wound in the left side of the scrotum. The forceps carrying the ligature were pushed through to the left side and the ends of the ligature secured. The forceps were then withdrawn, and by pulling on the ligature the right testicle was drawn along the track made by the forceps along the inguinal canal through the scrotal septum to the left side of the scrotum. Both wounds were then closed. The patient was readmitted two months later and the left testicle was then transplanted to the right side of the scrotum by a similar operation. No sutures were necessary for the fixation of the testicle in its new position, the contraction of the opening in the septum preventing its return and exercising a gentle continuous traction which was absent in the ordinary method of orchidopexy.

Mr. **TURNER** also showed: 1. A case of Double Retained Testicle in which the right testicle only had been transplanted. He proposed to transplant the left testicle later. 2. A case of Seasonal Enlargement of the Parotid Glands. The patient, a boy aged 14, had had painful enlargement of both parotid glands every spring and autumn for the last nine years. The other salivary glands were not affected, and the boy showed no other abnormality except that he was unduly sensitive to cold.

Dr. **F. J. POYNTON** and Mr. **H. MORRISTON DAVIES** showed a case of Cleido-cranio-dysostosis in which the removal of the outer part of the imperfect right clavicle relieved severe symptoms from pressure on the brachial plexus. The patient, a girl aged 20 years, had been reported originally by Dr. E. I. Spriggs in THE LANCET.[1] In December, 1913, she was shown by Dr. Poynton at the Clinical Section for an opinion as to the best method of treatment of severe symptoms, pointing to pressure on the right brachial plexus. Her work as a dressmaker had been interfered with by severe shooting pains down the inner side of the arm and over the front of the chest. There was marked loss of power in the right hand, and much circulatory disturbance. When the shoulder was depressed the right pulse was diminished in volume, a sign which assisted in the exclusion of syringomyelia, a condition which has been described in association with this form of dysostosis. Mr. Davies removed the outer fragment of the clavicle, and when the patient left the hospital there was already clear improvement. She had been completely free of the severe neuralgic pains, her hand had recovered power, and she had resumed her occupation. The only complaint now was of a dull ache in both shoulders, brought on by the long hours during which she sat in a position sewing over her work that tended to make the shoulders "over-stoop." This was relieved by sitting up with the shoulders braced back, and was of an entirely different nature to the former trouble, which was caused by the inner end of the outer fragment of the right clavicle hitching under the outer end of the inner one.

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[1] THE LANCET, Dec. 7th, 1907, p. 1599.

Dr. Frederick Langmead showed a case of Achondroplasia, Pseudo-rachitic. The patient, a female infant aged 6 months, was first seen when 9 weeks old. Many signs of rickets were present, but the legs were disproportionately short compared with the body, and the finger tips with arms extended reached only to just below the crest of the ilium. On this account the provisional diagnosis of achondroplasia had been made, although the head, face, and hands had not the characteristic appearance.

Dr. J. L. Bunch showed a case of Keratosis Follicularis Spinulosa in a boy aged 4. Lesions had first been noticed about 14 months ago on the neck and later on the arms, back, and abdomen. They consisted of small acuminate papules which were more perceptible to the touch than to the eye. There were no inflammatory phenomena.

Dr. C. O. Hawthorne showed a case of Acholuric Jaundice. The patient, a girl aged 1 year and 3 months, was a first born child, said to be jaundiced from birth. She had jaundice, considerable enlargement of the spleen, some enlargement of the liver, no bile in her urine, and normal stools. Blood examination showed white cells, 14,500 (polymorphs, 44·8; small lymphocytes, 47·2; large mononuclears, 6·8). The blood serum contained bile pigment.

Dr. Hawthorne also showed a case of Paramyoclonus Multiplex. The patient, a boy aged 6 years, was said to have been jerky since birth. There were frequent, quick, clonic contractions most marked in the abdominal muscles, but visible also in the shoulders, upper arms, thighs, cremaster muscles, and to some extent in the face. The contractions were bilateral, but the two sides were not always affected simultaneously. There was no family history of rheumatism, chorea, or epilepsy.

SECTION OF LARYNGOLOGY.

Exhibition of Cases.

A MEETING of this section was held on Dec. 4th, Dr. G. William Hill, the President, being in the chair.

Sir StClair Thomson demonstrated a case of Early Malignant Disease of the Larynx, shown at the last meeting, and referred to some details of the operation of laryngofissure which he had performed under chloroform after preliminary injection of eudrenine. He had injected 10–15 minims of cocaine solution into the trachea before making the opening, thus abolishing the spasm of the glottis. No Hahn's tube was used. as he had found that an ordinary tracheotomy tube was sufficient for such cases. He referred to the difficulty in removing the whole of the disease, especially from the arytenoid and subglottic regions, and showed sections from the case. As it was evident that some of the growth had not been removed, he performed a second operation ten days after the first, and the patient had made an excellent recovery.—The President pointed out that the removal of the arytenoid was liable to lead to complications, especially to difficulty of swallowing, and Dr. Dan McKenzie stated that he had had similar experiences.—On the other hand, Mr. Herbert Tilley was of opinion that excision of the arytenoid, whether partial or complete, caused no trouble whatever.—Dr. J. Dundas Grant added that wherever possible the upper part of the arytenoid should be left.—Dr. W. Jobson Horne recalled the fact that there had been very free mobility of the vocal cord in this case, and suggested that the disease might be a pachydermia rather than malignant disease.—In this connexion Mr. Stuart-Low stated that he thought it was important to palpate the larynx with the finger because in pachydermia the tissues were softer than in malignant disease.—Sir StClair Thomson, in his reply, believed that as a general rule removal of the arytenoid led to complications. He stated that he had had no fatality after 20 laryngofissures. He did not think it possible to palpate beyond the upper opening of the larynx.

Sir William Milligan showed three Foreign Bodies Removed from the Bronchi. The first was the case of a boy, aged 4, who accidentally inhaled a damson stone. Sharp dyspnœa followed, of which several attacks with spasmodic coughing occurred during the ensuing ten days. X ray examination proved negative. On admission to the Royal Infirmary slight bronchitis with diminished entry of air into the left lung was noted. Examination was made under general anæsthesia. There was a sudden arrest of respiration. Rapid tracheotomy was performed and artificial respiration. Recovery ensued. The child was put back to bed for half an hour, again anæsthetised, the tracheotomy tube withdrawn, and a bronchoscope tube passed. The damson stone was seen in the left bronchus with pointed end protruding (specimen shown). It was successfully recovered with forceps. Rapid recovery followed. In the second case, a female, aged 35, accidentally sucked in a carpet-tack from her mouth. There was a sudden and severe paroxysm of dyspnœa. During the following four days several slight attacks of dyspnœa and coughing fits ensued. She was admitted to the Royal Infirmary eight days after the accident. (An X-ray photograph of the tack *in situ* was shown.) Under general anæsthesia the tack was grasped, but on traction being made the forceps slipped off. Many unsuccessful attempts at extraction were made. The patient was kept quietly in bed for three days. Vapor benzoin co. was used every two hours. The patient was again anæsthetised and removed to the X ray dark room. The fluorescent screen was employed and forceps made to grasp the tack. Withdrawal was again unsuccessful owing to the forceps not holding the stem of the tack sufficiently firmly. Many more unsuccessful attempts at extraction were made. At the suggestion of Mr. Barclay (radiographer to the Royal Infirmary) an attempt was made to twist the tack round upon its own axis. After much trouble this was accomplished, and the tack was immediately withdrawn by grasping its head (specimen shown). Despite prolonged manipulations on these two occasions no systemic disturbance followed and the patient left hospital upon the third day in perfect health. In the third case a coin was readily seen impacted about the level of the sterno-clavicular joints. It was *in situ* for ten days. Removal was made with forceps. The œsophageal wall was intact. Rapid recovery ensued (specimen shown). These cases demonstrated (1) the tolerance of the tissues under certain conditions; (2) the advisability, if not necessity, of not relying upon the results of radiography; and (3) the value of the fluorescent screen as an aid to the removal of foreign bodies from the lung.—Mr. Tilley said that the results of radiography in these cases were often unreliable, and drew attention to the value of instantaneous photography.—Sir StClair Thomson, Dr. D. R. Paterson, and Dr. Irwin Moore discussed the difficulty of holding a foreign body with long forceps, and agreed that as soon as the object had been grasped it was advisable to withdraw the bronchoscope and forceps together rather than to attempt to bring the body through the tube.—Sir William Milligan added that it was advisable to perform tracheotomy in young children so that a wider tube and shorter forceps could be used.—The President referred to the value of combined X rays and bronchoscopy in operations of this kind.

Sir William Milligan also showed a case of Angiofibroma of three years' standing arising in the maxillary antrum in a patient aged 17. Kuhn's per oral intubation tube was passed and the mouth packed with gauze. Lateral rhinotomy was performed. Several attempts to remove the growth failed in consequence of the furious hæmorrhage. Finally, the cavity was tightly packed and saline administered. Forty-eight hours afterwards the packing was removed, when there was again very severe hæmorrhage. A radium emanation tube (50 mgm.) was inserted into the middle of the growth. No return of hæmorrhage occurred, and there was rapid retrogression of growth. Three weeks afterwards there was no trace of growth, but a dense, firm, fibrous mass was attached to the posterior antral wall (microscopic section shown). The general and local condition of the patient was now excellent. Sir William Milligan drew attention to the doubtful malignancy of nasal growths, and stated that although the microscopical section demonstrated tissue that appeared to be innocent the case was clinically malignant.—The PRESIDENT, Mr. TILLEY, and Dr. DUNDAS GRANT said that such cases could often be cured by radium.

Mr. TILLEY showed a Choanal Polypus with an ulcer on its posterior surface of the size of a shilling, the latter leading to some difficulty in diagnosis until the growth had been removed. In many such cases there was no recurrence, but if the polypus reappeared twice it was essential to open the antrum.—Sir WILLIAM MILLIGAN suggested that the ulcer might have been self-inflicted.

Dr. J. F. G. ELPHICK showed a patient with a Retro-pharyngeal Swelling in whom the Wassermann reaction was positive. It was agreed that the disease was probably syphilitic.

Dr. C. W. M. HOPE showed a patient from whom he had removed by stripping from underlying perichondrium a Tuberculoma of the Nasal Septum. The whole of the right side of the septal mucous membrane for a distance of 2 inches from the vestibule and almost up to the roof was found affected. Cartilage and bone were not touched. The floor of the nostril and inferior meatus were found affected and treated in the same way. Also affected anterior two-thirds of superior turbinal was removed. Sections and mass from the septum were shown.—Mr. D. VINRACE and others referred to the difficulty of distinguishing between lupus and tuberculosis.—Sir STCLAIR THOMSON had seen a similar case in which the disease lasted for 17 years, during which time it spread from the nose to the pharynx, later to the larynx, and finally to the lungs.

Dr. MCKENZIE showed some soft metal tubes for insertion into the nose after submucous resection of the nasal septum which greatly relieved the discomfort caused by nasal obstruction.

Mr. H. CLAYTON FOX showed a case with Malignant Disease of the Tonsil and Pillars of the Fauces, which was interesting because in its first stages it appeared to be a simple tonsillitis with abscess. Later the growth appeared and was microscopically papilloma, though the case was probably malignant.

Dr. L. H. PEGLER showed a Superior Maxilla from an aged female with an abnormal malar antrum behind the true maxillary cavity.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

The Threshold of Disease.

A MEETING of this section was held on Nov. 20th, Dr. WALTER G. SMITH being in the chair.

Professor J. A. LINDSAY, the President, read an address entitled "The Threshold of Disease." Dealing with the problem of early diagnosis, he chose four subjects for special consideration: (1) endocarditis, (2) gastric cancer, (3) disseminated sclerosis, and (4) pulmonary tuberculosis. 1. In acute rheumatism, endocarditis was extremely common in adults and almost the rule in children. Muffling of the first sound at the apex, slight increases in cardiac dulness, and arrhythmia were very suspicious signs. Prolonged rest in these cases was most important. 2. In a patient of 50 who had previously had a good digestion, and who was not suffering from renal or hepatic disease, cancer might be suspected if he took a dislike to flesh meats, exhibited some loss of flesh and debility, and occasionally vomited. The absence of free HCl was the rule. Hæmatemesis was rarely an early symptom. 3. Taken as a whole, the following symptoms were highly suggestive of early disseminated sclerosis—transient disturbance of vision, impairment of bladder control, paræsthesia of one or more limbs, diminution of abdominal reflex, loss of tone of sphincter iridis, giddiness, and emotional instability. 4. No tests other than finding tubercle bacilli in the sputum were convincing in making a diagnosis of incipient phthisis. Calmette's, von Pirquet's, and Arneth's, and the opsonic index method had a very limited value. We were thrown back on clinical examination. Early and very suggestive symptoms were—loss of flesh, slight afternoon pyrexia, cough, and acceleration of the pulse. The first physical signs in the chest were auscultatory, and consisted of hardness or weakness of the breath sounds. Crepitations were later. Slight hæmoptysis and night sweats were very significant. X rays were of some value, but the interpretation of the skiagram was very difficult.

Dr. SMITH referred to the vexed question as to whether signs elicited by percussion or auscultation gave earliest evidence of incipient pulmonary tuberculosis. He was inclined to believe those elicited by percussion did so.

Dr. J. F. O'CARROLL was not at all sure, when all was said and done, that the early diagnosis of disease had not as many disadvantages as advantages. There was something to be said for keeping going on as long as possible and trying to be guided by nature. As to pulmonary tuberculosis, he rather thought the debate between the value of percussion as against auscultation was a debate as to individual experience, each observer generally being impressed by the method by which he got the most information.

Dr. H. C. DRURY thoroughly agreed as to the supreme value of early diagnosis. He thought if the matter was reasoned out it would be seen that percussion would yield a very late sign as compared with auscultation. He had always believed that long before anything like crackling was discovered the roughening of the expiratory sound was the earliest departure from health.

Dr. T. G. MOORHEAD considered that a distinction should be drawn between the early diagnosis of phthisis on which one would start treatment and the early diagnosis from which statistics might be compiled with fairness.

Professor LINDSAY, in reply, said that for all statistical work in connexion with phthisis the line ought to be drawn between cases in which bacilli were found in the sputum and those in which they were not, because in one class there could only be a suspicion of the disease, whereas in the other there was positive proof.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 17th at the Royal Infirmary, Dr. A. Manknell being in the chair.—Dr. F. W. Eurich read short notes on three unusual cases of Bacillus Coli Infection. The first was that of a workman who was supposed to have strained himself whilst lifting a heavy weight. Shortly afterwards double orchitis set in which could not be accounted for in the ordinary way. Bacteriological examination of the urine revealed bacillus coli in great abundance. In the second case a man, aged 58, presented himself with swelling of both testicles, with a history of a knock two years previously, since which time he had had periodic attacks of orchitis. In this case also a bacteriological examination of the urine revealed enormous numbers of bacillus coli. The third case was that of a woman, aged 45, who on Dec. 13th, 1913, had what appeared to be a slight conjunctivitis of one eye. Four days later there was some iritis. After 10 days' treatment her condition improved, but on Jan. 23rd she had a relapse together with slight irritation of the bladder. On Feb. 3rd the condition was much worse—retinitis and turbidity of the vitreous. On Feb. 16th bacillus coli was discovered in the urine, and a vaccine prepared. In a fortnight recovery was complete.—The cases were discussed by Dr. R. A. R. Lankester, Dr. W. Mitchell, Dr. F. W. Goyder, and Dr. Manknell.—Dr. Eurich then replied.—Dr. Mitchell showed numerous X Ray Photographs of great interest.—Dr. Goyder read a paper on the Treatment of Infantile and Other Forms of Paralysis in General Practice. Treatment, he said, is based on the principle enunciated many years ago by Hugh Owen Thomas and rediscovered by Robert Jones, of Liverpool.[1] No paretic muscle has a chance of recovery so long as it remains overstretched. Hence the first rule of treatment is to fix the limb in such a position that the paretic muscles are relaxed. Operations such as tenotomy may be required for this purpose. Plaster-of-Paris splints may be used, or, better, the much lighter celluloid splints. Walking should be encouraged with the patient in the splints. It is impossible to say how much improvement will take place after this simple manœuvre. Even after many years of paralysis the improvement is often astonishing. No operations for tendon grafting should be undertaken until many months after the application of the splints. If as soon as possible after the initial attack such splints are applied, since the paretic muscles never become overstretched, recovery from paralysis, if it is going to take place at all, is certainly hastened. This principle can be applied to nearly all forms of paralysis, irrespective of their cause—e.g., wrist drop from lead or musculo-spiral injury or Erb's obstetrical paralysis. In Little's disease the element of spasm is also present, but wonders can be worked if the child has any intelligence by simple fixation in the over-corrected position for some months after simple tenotomy of the adductors or tendo Achillis according to the region affected. In many cases no tenotomy is required. More complicated procedures should be reserved for cases in which simpler ones have proved insufficient. Hence, apart from operation, much can be done by the general practitioner, especially in the early stages of infantile palsy. Treatment, though tedious, is most interesting, and often well repays the trouble taken.

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[1] THE LANCET, May 30th, 1914, pp. 1515, 1551.

LIVERPOOL MEDICAL INSTITUTION.—At the last meeting of this institution Dr. E. W. Hope, the President, from the chair, drew attention to the Belgian Doctors' and Pharmacists' Relief Fund, and a committee was formed to work with the executive of that Fund.—Mr. G. P. Newbolt read a short paper on Appendicitis in the Elderly. He reported three cases, and emphasised the fact that appendicitis did occur in those over 60 more commonly than was generally recognised, and also that perforation not infrequently took place without causing any serious initial symptoms.—The paper was discussed by the President, Mr. W. T. Thomas, and Mr. F. Larkin.—Mr. A. A. Bradburne read a short paper on Bilateral Optic Neuritis due to sphenoidal sinusitis, in which the left sixth nerve was involved; the vision of the left eye was somewhat impaired with severe occipital pain; spontaneous discharge of pus from the sphenoidal sinus was followed by gradual improvement. Total absence of any trouble in the nose pointed to sinus infection.—Captain C. Thurstan Holland read a paper on the X Ray Treatment of the Wounded at Fazakerley Hospital, fully illustrated by lantern slides. He carefully described his methods for arriving at the locality of a foreign body in the tissues illustrated. There were numerous lantern slides showing the destruction of bone and the character of the injuries produced by bullets and pieces of shell.—The President opened the discussion.—Dr. Barclay described the instrument which he had devised to facilitate rapid estimation of the depth of foreign bodies and deprecated indiscriminate removal of bullets.—Dr. J. Oram described another method based on the series of curves.—Captain Arthur W. C. Evans referred to his experiences in the Boer War, and compared them with his present work at the Fazakerley Base Hospital. He was strongly in favour when removing the bullet from the fleshy parts of making a free incision in order to save the muscles as much as possible. The muscles should be separated rather than cut across. The bullet of to-day made a much more serious wound than the bullet of the Boer War.—Captain Holland, in his reply, advocated conservative surgery when dealing with comminuted fractures.

ROYAL INSTITUTION.—Professor C. S. Sherrington, M.D., F.R.S., the new Fullerian Professor of Physiology at the Royal Institution, will deliver a course of six lectures at the institution on Muscle in the Service of Nerve, at 3 P.M., on Tuesdays, Jan. 19th and 26th, and Feb. 2nd, 9th, 16th, and 23rd, 1915.

LADY MINTO'S INDIAN NURSING ASSOCIATION.—In the annual report of this association, dated Nov. 23rd, attention is called to the difficulty in obtaining trained nurses for the work in India. The majority of the nurses who had been selected for service with the association afterwards withdrew their names and joined various bodies for tending the sick and wounded in connexion with the war. Reference is also made to the urgent need for funds owing to the falling off in subscriptions. The address of the association is 91, York-street, Westminster, S.W.

Reviews and Notices of Books.

Diseases of the Stomach.

BY CHARLES G. STOCKTON, M.D. London: D. Appleton and Co. 1914. Pp. 774. 65 illustrations. Price 25*s.* net.

THIS book is written primarily for the use of general practitioners by a clinician who has had long experience as a keen observer of the diseases of which he treats. To make it more comprehensive he has obtained the aid of various authorities on pathology, laboratory methods, radiography, and physical methods of treatment. In his introductory chapter he discusses the position of the "internist" (a term which the author employs to denote the specialist whose province is the gastro-intestinal tract) who should share with the general practitioner the domain of the diseases of the stomach. He rightly describes as nihilistic the view that gastric digestion is unimportant and unnecessary—a view which we think is the result of the technical skill that has been attained by the modern surgeon and the experimental physiologist. After reading his introduction we agree that the surgeon and the morbid anatomist see only few of the diseases of the stomach, and then but the advanced stages of disease. The study of diseases of digestion includes not only organic disturbances, but the far more frequent functional disturbances, and must fall into the special province of the general practitioner and the "internist."

In the earlier chapters are discussed the anatomy and physiology of the stomach and methods of examination. Amongst these we note special descriptions of the "string test," together with duodenal alimentation, a method which the author's own observations lead him to conclude to be of some value in curing cases which otherwise would require surgical relief. We do not think, however, that the method has been as yet widely introduced in this country. In the chapter on radiography there are some useful diagrams from actual photographs. He deals fully with dyspepsia, but points out rightly that the modern attempt to classify such cases on a basis of some special manifestation of gastric disturbance, such as the variation in secretion or in motility, is in practice not feasible, although occasionally there may be such a dominant feature. Discussing the various theories that have held sway concerning the cause of dyspepsia, he comes to the conclusion that symptoms almost identical may be induced by disturbance of the nervous system, by auto-intoxication, by metabolic failure, or by gastritis, and he discusses these in detail.

There is some truth in the adverse comment on the practice of exploring the abdomen for the purpose of diagnosis and the removal of the appendix as a routine procedure, or even, if this fails, draining the gall-bladder. A large variety of dyspepsias are discussed under the headings of clinical manifestations, such as eyestrain, disturbance of special senses, and diathesis. The chapters on peptic ulcer are specially worthy of note and include various prescriptions and general methods of treatment. Dealing with gastroptosis the author illustrates fully the physical methods of treating such. In addition to all the ordinary diseases usually dealt with he devotes a chapter to syphilis of the stomach and another to arteriosclerosis involving the vessels of the stomach, with illustrative cases;

then vomiting, abdominal pain, and tenderness are discussed in detail. He also has a special chapter on the œsophagus, and concludes with a brief account of alimentation. We note on page 45 what is evidently a misprint, where it is stated that five or ten *minutes* elapse between the two deglutition sounds heard on auscultation.

The book is good and up-to-date, and we can safely say that the material dealt with has been put forth in an unbiassed fashion which will appeal to both the general practitioner and the specialist.

Outlines of Chordate Development.

By WILLIAM E. KELLICOTT, Professor of Biology in Goucher College. London: Constable and Co., Limited; New York: Henry Holt and Co. 1914. Pp. 471. Price 10*s.* 6*d.* net.

THIS volume may be taken as the natural sequence and corollary to that on general embryology, and in it the student is introduced to the study of chordate development through the embryological history of amphioxus, as it affords, in simple diagrammatic style, the essentials of early chordate ontogeny.

The whole development of amphioxus falls into four general periods: 1. Production of the germ cells, including oögenesis and spermatogenesis and spawning. 2. Embryonic period, from fertilisation to the opening of the mouth—a very rapid phase, occupying about 36 hours at normal seasonal temperatures of the water. 3. Larval period, from the opening of the mouth to the cessation of pelagic life and the assumption of a burrowing habit—a period about three months—during which the parts marked out in stage 2 are further elaborated. The larva is then about 3·5 mm. long. 4. Adolescent period from stage 3, or the "critical stage," to sexual maturity, a period marked by histological differentiation and the gradual appearance of adult characteristics. Each period is described with ample detail. Following this is a rather full account—166 pages—of the early and later development of the frog, the latter dealing with organology. The frog is important zoologically, not as a central type of any large group of chordates, but as a transitional form connecting the lower and higher groups of craniata. The account is admirably clear, and does not err on the side of giving too many details.

In discussing the development of the chick, first the embryonic membranes and appendages are considered and then the organology. These chapters are relatively brief, and emphasis is laid on the embryonic membranes, and upon the early phases of development which represent the most frequent modifications of the type of chordate development. This is an admirable and attractive exposition of the subject, while the numerous and carefully drawn illustrations greatly help to elucidate the chief morphological changes. The final chapter on the mammals includes only those phases of development that are of chief interest to the general student—e.g., the earlier stages in the formation of the embryo, the establishment of its relations through the placenta with the maternal organism, the development of the embryonic membranes and appendages, and also the development of the external form of the human embryo.

This treatise on chordate development is as lucid, succinct, and attractive as that on general embryology, and both works should prove most valuable to students of the fascinating subjects with which they deal.

LIBRARY TABLE.

A Text-book of Organic Chemistry. By A. F. HOLLEMAN, Ph.D., F.R.A. Amst., Professor ordinarius in the University of Amsterdam. Edited by A. JAMIESON WALKER, Ph.D. Heidelberg, assisted by OWEN E. MOTT, Ph.D. Heidelberg, with the coöperation of the author. Fourth English edition, partly rewritten. London: Chapman and Hall. 1914. Pp. 622. Price 10*s.* 6*d.* net.—The favourable reception of this book is evidenced in the issue of a fourth edition within ten years of its first publication. In previous notices we anticipated its success owing to its clear presentation of both facts and principles and to the intelligible system of classification adopted. The book has received careful revision, necessitated by the advances made, chiefly in the application in organic chemistry of physicochemical methods, while the section on tautomerism has been entirely rewritten, and that on the benzene derivatives rearranged. It is a trustworthy book, and whilst dealing with a great and complicated subject keeps well within the bounds of a text-book.

Mediterranean Winter Resorts. By EUSTACE REYNOLDS-BALL, F.R.G.S. Vols. I. and II., bound together. Seventh edition. London: Kegan Paul, Trench, Trübner, and Co., Limited. 1914. Pp. 635. Price 5*s.* net.—This guide-book to the principal health and pleasure resorts on the shores of the Mediterranean appeals not only to the pleasure-seeker but also to the invalid. To this end it contains special articles written by resident English physicians on the principal invalid stations. Vol. I. covers only the northern shores of the midland sea, the French, Italian, and Levantine Rivieras, South Italy and Sicily, and Southern Spain. First a series of travel routes is given. Then come descriptions of the principal resorts under the above sections, followed in each case by practical details as to hotels, cafés, restaurants, golf-links, places of entertainment, churches, hospitals, banks, conveyances, and a directory of English doctors, dentists, and chemists, with much other useful information. Vol. II. covers on a similar plan Morocco, Algeria, Egypt, and the Mediterranean islands. Each volume has a substantial index, and appendices include the list of members of the Anglo-American Continental Medical Society, legal notes, hints for winter residents, notes on winter in the West Indies, and India as a winter resort.

Medical Nursing. By A. S. WOODWARK, M.D., B.S. Lond., &c. London: Edward Arnold. 1914. Pp. 324. With 68 illustrations. Price 4*s.* 6*d.* net.—This is a useful little book, containing all the information needed by a nurse in regard to the illnesses from which her patients may be suffering. The instructions are clear and precise, there is no verbiage, and the illustrations are good and sufficient. That, however, on p. 18, showing the proper way of raising a patient, does not give the position of the arms correctly, and is not according to the (correct) instructions in the text. Antiseptics are not accurately defined either on p. 32 or on p. 79. Is not "the juice of half a lemon" rather a large quantity to take with each dose of, say, cod-liver oil? Our last criticism is that a bunion is not a corn (p. 270). On the whole the book fulfils its purpose very well.

Ueber den Mechanismus der Oxydationsvorgänge im Tierorganismus. Von Dr. med. LINA STERN, Privatdozent der Physiologie an der Universität Genf. Mit 12 Abbildungen in text. Jena: Gustav

Fischer. 1914. Pp. 61. Price 2.20 marks.—This is a lecture that was delivered in Berlin in 1913, and it contains the results of investigations by the author and Professor Battelli on the oxidation processes in the organism. It is divided into two parts, of which the first deals with the now well-recognised oxidases, such as the alcohol, uric acid, xanthin, tyrosin, and phenol oxidates. Next, what are called "oxidones" are dealt with. These are insoluble catalysers which are present in animal tissues and which possess the property of accelerating oxidation in different substances. The second part deals in an attractive manner with the respiration of the tissues, or what is called "internal respiration." This is a useful and suggestive lecture on an obscure but all-important chemical problem.

JOURNALS AND MAGAZINES.

The American Journal of Tropical Diseases and Preventive Medicine, Vol. II., No. 4.—This number opens with an editorial by Dr. Isadore Dyer on the cause of pellagra, in which it is stated that "the number of cases now in the United States and the number of deaths that result from the disease each year is simply appalling." The two main views as to the origin of the malady are discussed—namely, whether it is a deficiency disease associated with a faulty dietary or a specific infection due to a micro-organism. Some account is given of experiments on monkeys, the results of which, however, have been hitherto inconclusive. There are five original articles, the first of which is on the propagation of amœbic dysentery in animals and the recognition and reproduction in animals of atypical forms of the disease, written jointly by Dr. A. W. Sellards and Dr. W. A. Baetjer. It is said that the inoculation of infective material from virulent, and also from distinctly avirulent, cases of amœbic dysentery directly into the cæcum of kittens has given practically 100 per cent. of infections as compared with the usual result of about 50 per cent. of positive infections when virulent material is fed or injected per rectum. Major Weston F. Chamberlain, of the Medical Corps of the United States Army, contributes a paper, with illustrative plates, on spirochætæ and fusiform bacilli in various lesions in the Philippines. A further note upon the occurrence of endamœbæ mortinatalium as a human parasite is supplied jointly by Dr. A. J. Smith and Dr. F. D. Weidman, from the laboratories of pathology in the Medical School of the University of Pennsylvania. Dr. H. Windsor Wade and Dr. Houston L. Staring of New Orleans contribute an article on bubonic plague, with details of the study of a typical case which occurred during the recent outbreak in that city. Tuberculosis in tropical countries, and the necessity for greater effort to prevent it, are discussed by Dr. Isaac W. Brewer. "Mal de bocha," or tropical infectious stomatitis, is the subject of a contribution by Dr. Nathan Barlow, based on his experience of the disease in Northern Mexico. This affection is apparently transmitted by direct or indirect contact, and Dr. Barlow regards a rather delicate spirochæta as the most probable cause. The usual notes and comments, with reviews of current literature, complete an interesting number of the journal.

The British Dental Journal.—The issue of Dec. 1st of this journal contains a paper by Mr. John Humphreys on the Evolution of the Human Dentition. He traces the development of tooth forms through the various geological periods, discussing in detail the primates. Reference is made to the teeth of prehistoric man, and he states that "at the end of its long period of evolution the human dentition has almost returned to the point from which it started and reverted towards the primitive anthropoid arrangement as in parapithecus." There are two presidential addresses, the one by Mr. W. de C. Prideaux dealing with the antiquarian beauties of the county of Dorset.

ERRATUM.—In the review in THE LANCET for Dec. 5th, p. 1306, of Dr. Arthur Thomson's book, the title was erroneously given as "Outlines of Biology." It should have been "Outlines of Zoology."

Reports and Analytical Records

FROM

THE LANCET LABORATORY.

(1) URODONAL; (2) FILUDINE; (3) JUBOL; AND (4) GLOBEOL.

(J. L. CHATELAIN, PARIS. LONDON AGENTS: HEPPELL AND CO., 164, PICCADILLY, W.)

WE have received four interesting pharmaceutical products from the laboratories of M. Chatelain, Paris. 1. Urodonal is described in many clinical accounts as an effective solvent of uric acid, and accordingly it is regarded favourably in the treatment of arthritis, rheumatism, and uric acid troubles. It is a combination of three definite compounds, each of which is a recognised solvent of uric acid. They are methyl-glyoxalidine, quinate of diethylenediamine, and hexamethylenetetramine. The preparation occurs in an attractive granular effervescing form. 2. Primarily, the formula of filudine is designed for the treatment of hepatic disorder and in addition to thiocinnamate of caffeine contains liver and spleen extracts. These latter are claimed to stimulate the functions of the liver and more particularly its antitoxic activity. It has thus been employed in cirrhosis, hepatic colic, and diabetes. It has been used also in malaria. The formula is an interesting one and, organic extracts apart, cinnamic compounds are known to increase the supply of red corpuscles in the blood. 3. Jubol is also an interesting formula containing as a basis agar-agar with biliary extract and also extracts of the intestinal glands. It is regarded as a means for the rational treatment of intestinal stasis. It has been used, it is said, with excellent results in the treatment of muco-colitis, its action being certain but mild and unirritating. 4. Our examination of globeol pills confirmed the statement in regard to their novel composition. When extracted with cold water a fluid was obtained which showed the hæmoglobin spectrum. The solution coagulated on boiling, and small though definite quantities of iron and manganese were found. The formula is put forward as of value in the treatment of anæmia and neurasthenia.

TONALKA APERIENT WATER.

(IDRIS AND CO., LIMITED, PRATT-STREET, CAMDEN TOWN, LONDON, N.W.)

The composition of this water resembles that of certain well-known natural bitter purgative waters. There were present the sulphates of sodium and magnesium with some common salt and a small quantity of carbonate of soda. The total saline constituents amounted to 54·04 grammes per litre. According to our analysis these were made up as follows: sodium sulphate, 33·40 grammes; magnesium sulphate, 16·88 grammes; sodium chloride, 3·46 grammes; and carbonate of soda, 0·30 gramme. The therapeutic action of the water will be understood from this analysis. It serves as a mild and efficient purgative.

LUTROL.

(CORBYN, STACEY, AND CO., LIMITED, 673, COMMERCIAL-ROAD EAST, LONDON, E.)

Lutrol is an efficient antiseptic and detergent, being composed of a neutral soap and cresylic acid. The ingredients are carefully balanced so as to preserve a fluid without corrosive properties. We decomposed the preparation separating the soap from the cresols, and there were thus liberated exactly 50 per cent. of cresylic acid. It is, of course, well adapted for cleansing and sterilising work in surgical practice, and gives a clear solution diluted with water.

(1) URASEPTINE; (2) MERSALV; (3) IODEOL; AND (4) IODARGOL.

(M. BRESILLON AND CO., GAMAGE BUILDINGS, HOLBORN, LONDON, E.C.)

1. Uraseptine is, as its name implies, a urinary antiseptic, it is made up in a granulated form. The therapeutic constituents present are piperazine, urotropine, helmitol, and the benzoates of sodium and lithium. The presence of these latter is important in rendering the urine acid by the action of which urotropine or hexamethylenetetramine yields formaldehyde. 2. Mersalv is an ointment containing 10 per cent. metallic mercury amalgamated with a non-fatty but oily basis in a very finely distributed metallic state. It is prepared for the treatment of syphilis with mercury by the inunction method. 3. Iodeol preparations in various forms have for their basis colloidal chemical iodine and form an effective method of administering this element. Iodeol is prepared by suspending colloidol iodine in sterilised olive oil. It is used as an intramuscular injection, while another preparation (4), known as Iodargol, a viscid mixture containing colloidol iodine, is used for injection into the urethra. It is enclosed in ampoules and a special syringe is provided for the purpose.

LAGER BEER.

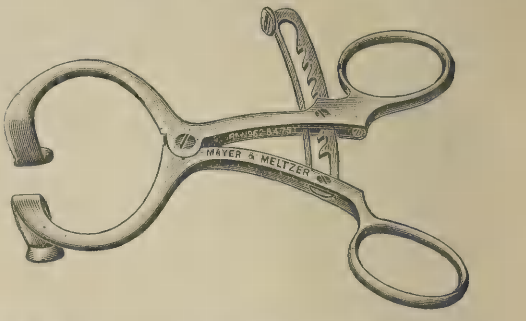
(THE PHŒNIX TRADING CO., 14B, GREAT MARLBOROUGH-STREET, LONDON, W.)

Two varieties of lager beer were examined, the one being light in colour and the other dark brown. They both showed the same alcoholic strength. The complete analysis of the light beer was as follows: alcohol by volume, 5·00 per cent.; malt extractives, 5·78 per cent.; volatile acidity reckoned as acetic acid, 0·09 per cent.; lactic acid, 0·25 per cent.; malt sugar, 1·04 per cent.; and mineral matters, 0·24 per cent. The analysis of the brown beer was as follows: alcohol by volume, 5·00 per cent.; malt extractives, 5·89 per cent.; mineral matters, 0·19 per cent.; volatile acidity reckoned as acetic acid, 0·09 per cent.; lactic acid, 0·22 per cent.; and malt sugar, 1·08 per cent. It will be seen that there is a general resemblance of composition between the two beers. They are both quite light alcoholic beers, and contain further a minimum of sugar. They have a flavour which may be described as "dry." We searched for objectionable preservatives, but without success.

New Inventions.

AN IMPROVED (DOYEN'S) MOUTH GAG.

Doyen's gag has some good points, or it would not be in general use; yet it also has bad ones, which I will enumerate thus: 1. The jaw of the instrument which happens to be upwards usually presses against the palate when the mouth is widely opened; this causes pain and occasionally injury. 2. The lower lip of the patient is liable to be caught between the incisor teeth and the lower jaw of the gag; this also causes pain and injury. Sometimes the patient suffers more from damage thus caused than from the surgical operation. 3. The milled head of the joint-screw projects to such an extent as to prevent close contact of the rubber face-piece (of the anæsthetist's apparatus) with the patient's cheek; this allows of the escape of gas or ether and consequently delays proceedings. 4. When the gag is widely opened the end of the rachet comes so close to the patient's mouth that it (like the milled screw-head) is liable to cause an escape of the anæsthetic; further, its shape renders it liable to tear the thin rubber air cushion of the face-piece. 5. The sharp saw-like rachet is quite exposed; consequently, when in order to remove the gag this rachet is released it is liable, through contraction of the stretched muscles of the patient's jaw, to be driven forcibly backwards and so lacerate the anæsthetist's finger, just as a saw would if drawn across it. Two practitioners have informed me that they have thus suffered. 6. The spring is forged solid with the rachet and occasionally breaks. This entails several days' deprivation of the use of the instrument while it is being repaired, and a cost of about 10*s.*



In the opinion of two anæsthetists who have used it the disadvantages referred to above have been overcome in the gag illustrated here. It was made to my designs by Messrs. Mayer and Meltzer, of Great Portland-street, London, W.

CHARLES J. HEATH, F.R.C.S. Eng.,
Late Surgeon, Hospital for Diseases of the Throat, Golden-square, W.
Devonshire-place, W.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—A meeting of this society will be held at 11, Chandos-street, Cavendish-square, London, W., to-day (Friday, Dec. 18th), at 8.30 P.M., when a paper (illustrated by slides) entitled, "Tropical Problems in the New World," will be read by Dr. Andrew Balfour, C.M.G.

CIVIL AND MILITARY SANITATION IN THE TROPICS.—The second Chadwick public lecture was delivered by Sir Ronald Ross, K.C.B., F.R.S., at the London School of Economics on Dec. 11th. The lecturer first asked how far it was advisable or necessary for governments to develop sanitation, and pointed out that as a matter of fact sanitation could not be conducted by private individuals themselves, and must require the coöperated efforts of the authorities. The second question was what modifications in the ordinary apparatus of free government were demanded for sanitation; and the lecturer urged that it was unwise to bestow complete liberty of action as regards sanitation on very small municipal governments. He maintained that where the death-rate of such municipalities was above the average they should be called to account by superior governments, as had actually been done in the case of one municipality in the empire. His view was that very small municipalities, however desirous they might be to advance sanitation, seldom possessed enough men with sufficient knowledge of town management and hygiene to conduct these branches of administration with success. The third question was whether Government should develop research; and this, he said, was already answered by the Colonial Office and the India Office in the affirmative. Lastly, he pointed out that the head of every sanitary administration should be placed upon a footing equal to that of the head of every other great department, and should, if possible, be always given a seat on the local executive council. The next course of lectures will be given by Dr. F. M. Sandwith on War and Disease at the Royal Society of Arts on Jan. 15th, 22nd, and 29th at 5.15 P.M.

THE LANCET.

LONDON: SATURDAY, DECEMBER 19, 1914.

The Treatment of Wounds in War.

IN recent issues of THE LANCET we have printed some important communications on the treatment of the wounded in war, which originated in an address delivered before the Medical Society of London by Sir WATSON CHEYNE;[1] this week we are able to publish a contribution to the discussion from Sir ANTHONY BOWLBY which derives its great interest from the presence of the author with the Expeditionary Force as consulting surgeon. Broadly speaking, the question as promulgated at the Medical Society resolved itself into a debate as to what should be done to a recent wound in which septic germs have become lodged. Is it sufficient for us to prevent the access of further organisms by the application of an aseptic dressing, trusting to the *vis medicatrix naturæ* or the resistance of the tissues to deal with those germs which have already been admitted, or shall we endeavour by the use of antiseptic substances to destroy the invading organisms before they have time to penetrate the tissues bordering on the wound? This is no new question. It is that which presented itself to LISTER some 50 years ago, and it is that which he answered from the standpoint of knowledge then reached by his antiseptic treatment. When he recognised that the cause of suppuration in wounds was the presence of micro-organisms he endeavoured to destroy them by the application of crude carbolic acid, and the success of his endeavour demonstrated that it was possible at an early stage of the infection of a wound to remove the invading germs by chemical means. His first case[2] was one of compound fracture, a form of lesion which had up to that time been always followed by prolonged suppuration and severe septic symptoms. After the application of the carbolic acid the wound healed without suppuration and all signs of general sepsis were absent. This method of dealing with wounds, somewhat modified by its introducer as his experience widened, was employed by him during the whole of his active professional life, and it was followed with remarkable success by other surgeons throughout the world. Gradually, however, the idea arose that such a strenuous treatment of a wound must do great harm to the surrounding living tissues. The evidence in favour of this damage was by no means great, and the objection to the use of antiseptics in the wound was almost completely based on theory. The advocates of the aseptic method relied on theoretical considerations; it must be, they contended, harmful to pour a strong solution of carbolic acid into a wound, for the damage to the living tissues may be quite substantial.

Sir ANTHONY BOWLBY's letter supports the arguments employed by Sir WATSON CHEYNE, who advocated the maintenance of the Listerian methods in fitting circumstances, in a remarkably direct way. Of his experiences with the army Sir ANTHONY BOWLBY draws a picture which shows convincingly that it is upon antiseptic procedure much as LISTER laid down its principles that the treatment of wounds in war must depend. No one doubts that in the case of a deliberate wound made after the taking of elaborate precautions by an operating surgeon there is no need to employ antiseptics, for with care it is possible to keep the wound free from germs. But the case is utterly different when we have to deal with wounds which have already become infected. Here it is not possible with the very greatest care to prevent the multiplication of the germs which have already entered the wound and the absorption of these germs or their products. The application of an aseptic dressing over the wound will not and cannot affect the septic process going on within. When the wounded fighting man is seen within a few hours of the infliction of the injury it may be and often is possible to render the wound aseptic. In such cases the septic organisms are there; but they can be antagonised, and they may be overcome. And how seldom it happens that in war the wounds of the sufferer can be seen within a few hours; how frequently the soldier having incurred an injury of the sort most apt for sepsis abides long hours in an environment reeking with infection. We may all of us have known the tragic truth that no amount of forethought, skill, or devotion could spare our defenders these terrible risks, but Sir ANTHONY BOWLBY's simple forcible description of the conditions must make this more real to us than ever. "There seems to be an idea," he says, "that 'aseptic' surgery has been practised at the front, but as far as the clearing stations are concerned, this is entirely a misapprehension. I have myself never given up 'antiseptic' principles and treatment, and I was glad to find that in every clearing hospital antiseptics were always used." And he shows that the usual treatment must be in accordance with the Listerian routine.

As a matter of fact the separation of surgery into the completely aseptic and the completely antiseptic is rather academic. In spite of its disdain for chemical antiseptics modern aseptic surgery has not hesitated to employ a solution of iodine to sterilise the skin preparatory to surgical operations; but when we hear of wounds in action being treated by painting the skin with iodine and by applying an aseptic dressing, while nothing is done to the wound itself, we cannot endorse the reasoning which underlies. This may be aseptic surgery, but it is not wise. The case is, indeed, different when many hours have elapsed since the infliction of the wound; then the germs have had time to penetrate deeply into the tissues forming the sides of the wound, so that an antiseptic cannot follow them. What shall be done in such cases? The essential elements in the treatment here are the removal of disintegrated structure where the circumstances point thereto, and the employment of adequate drainage. It may be asked whether the employment of an antiseptic in a wound never damages the tissues. Certainly this does happen, but the damage inflicted on the tissues by one application of even a very strong antiseptic will do little mischief, and what mischief is done is rapidly repaired by the tissues. What is really harmful is the repeated application of even weak antiseptics to healing tissues. Many who would shrink from applying a strong solution of carbolic acid to a recent wound will not hesitate to irrigate a wound day after day with antiseptic solutions which can do little more than serve to irritate the parts. Sir Rickman Godlee prophesied recently that the time would come when some surgeon would rediscover Listerism. We cannot believe that such rediscovery will be necessary at any rate until our science takes some unforeseen step forward. As long as wars are conducted as at present Listerism will be the only sound method to follow in dealing with the wounded in the field. The pendulum has swung far in the opposite direction, but only to return. Sir Rickman Godlee quoted recently Lister's saying that if he should ever write a book on surgery he would choose as its motto the words of Psalm xxxviii., "My wounds stink and are corrupt, because of my foolishness." Much unnecessary sepsis exists to-day in civil practice because of the unwise neglect of the teaching of Lister. Sir Anthony Bowlby's vivid communication indicates how hopeless any other routine would be in military practice.

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[1] THE LANCET, Nov. 21st (pp. 1185, 1200) and 28th (p. 1248), 1914.

[2] THE LANCET, vol. i., 1867, p. 326, et seq.

Quackery and a Ministry of Public Health.

THE Unqualified Practice Prevention Committee of the General Medical Council submitted recommendations at the recent meeting of the Council after it had considered the report of the Select Committee of the House of Commons on the subject of so-called patent medicines. These recommendations,[1] which were adopted by the Council, suggested that the approval of the Select Committee's report by the General Medical Council should be expressed under two headings. In the first place, there should be conveyed to the Lord President of the Privy Council an expression of the General Medical Council's complete agreement with the recommendations of the Select Committee; and in the second place there should be a representation to the Government, through the Lord President, of the necessity for the immediate creation of a Ministry of Public Health. It will be remembered that the Select Committee recommended that the administration of an improved, reconstructed, and coördinated law relating to the advertisement and sale of patent medicines should be entrusted to one department of State, and that this should be the "Ministry of Public Health, when such a department is created." The Select Committee considered the possibility of legislation to regulate the trade in patent medicines preceding the institution of a Ministry of Public Health, and suggested that the Local Government Board should undertake "meanwhile" the proposed departmental duties. The General Medical Council has now by resolution urged the desirability of proceeding first to create the department without waiting for this particular section of its probable future duties to be brought into being. This appears to be a wise and reasonable course, and it is to be hoped that the Government may be able to find the time and the occasion to carry into effect the advice of the representative body of the medical profession, charged with the standardising of our education and the proper maintenance of our statutory Register.

For the passage of controversial measures involving conflicting commercial interests there is not likely to be an early opportunity, and legislation on the subject of patent medicines will involve the disturbance of vested interests, whose representatives will certainly wish to secure a full hearing for their case, and to invoke protection wherever they can find it. At the present time a large number of Members of both Houses of Parliament are on active service, and are likely to remain so for many months—a fact which, combined with the other circumstances of a grave national position, renders it probable that only a very small amount of domestic legislation will be attempted in the near future. In the case of a large and flourishing trade, if not in most shapes a desirable one, no Bill affecting it is likely to be introduced at present, and neither the advocates of such a measure, nor its opponents, would wish to have it discussed under any unsuitable conditions. The formation of a Ministry of Public Health, however, is a different matter. It is not the result of a proposal made by the Select Committee on Patent Medicines, which has merely suggested the creation of certain duties for a State department, which naturally would be assigned to the Ministry of Public Health if it existed. It does not exist, but its creation has been asked for and desired for a long time by all interested in the national health and welfare. Incidentally it would be very convenient if, on the passing of a new law to regulate the trade in patent medicines, the department were there ready to carry it into effect, but the formation of the department has been urged upon other grounds. The formation of a new authority to supervise the carrying out of existing laws of great public importance, for which it would be specially adapted by its constitution and to which it would devote its undivided attention, cannot be deemed to be an innovation likely to create controversy or arouse opposition. The proposal should rather appeal to all anxious to promote business-like efficiency in matters of administration. Moreover, at this particular juncture questions of public health are arising out of conditions wholly abnormal, and which demand special attention and skilful handling. Huge camps of soldiers in training, and large bodies of recruits in towns and populous districts where no such incursions of population have been provided for, are a matter of grave concern for others besides the military authorities, and are not likely to become less so as winter progresses and as time goes on. Camps and other arrangements for the internment of aliens come into the same category, and meanwhile the civil population is deeply concerned in the maintenance of its public health. Soldiers returning from the front are not unlikely to develop infectious disease, and the general health of the nation during the coming year or years may not improbably be below the usual standard, though we may add that for various reasons the reverse may occur.

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[1] THE LANCET, Dec. 5th, 1914, p. 1314.

In devoting itself to the maintenance of the public health in spite of adverse conditions the medical profession, considerably depleted by the absence of so many of its members from their usual duties, is likely to have an anxious period and one of strenuous work before it. Its members, therefore, and particularly those to whom the public health is a matter of official solicitude, would assuredly welcome the assistance and coöperation of a strong Government department in sympathy with their aims, and able to give its whole attention to furthering them. It is a hopeful sign that a committee such as that which was appointed to consider the case of patent medicines should have appeared almost to assume general assent to the proposition that a Ministry of Public Health ought, and is likely to be created. It has certainly also recommended the institution of administrative duties which would require important additions to be made to the personnel of any existing department, and would increase the responsibilities of the department named by the committee in an inconvenient degree should they be thrust upon it. We hope, however, that no necessity for this will arise, and that the representation made by the General Medical Council will receive prompt and serious attention from a Government whose preoccupations we fully recognise and whose devotion to duty is increasing.

ENTERIC FEVER AT BARCELONA.—There is at present a severe epidemic of typhoid fever at Barcelona—more than 20,000 cases, at the rate of 200 to 300 cases a day. The cause is said to be a contaminated spring, which is the main source of the drinking water-supply of the town.

Annotations.

"Ne quid nimis."

THE MEDICAL DIRECTORY, 1915.

THE regular appearance of the annual "Medical Directory," published by Messrs. J. and A. Churchill, has long since established itself as an event of important utility on which not only medical men, but many other classes of people and public officials, have come to rely as a part of the machinery of affairs. The first thing that strikes us in the seventy-first annual edition, that for 1915, just to hand, is the thinness in bulk of the volume. Seeking the cause of this we find that the useful numerical summary of the profession, given yearly on p. 2, is limited this year to the medical profession "in the British Isles." This reaches a total of 36,656. The total in the summary last year was 41,972, and the explanation is found in the fact that the tabulation last year included members of the profession resident abroad. The title page next indicates that the directory of registered medical practitioners "resident abroad" is now contracted in scope to those "resident in Europe and North Africa." This section, which no longer contains an alphabetical list of names, but only a local list (with detailed mention, however), occupies only 13 pages, as against 205 pages in 1914, which accounts in large part for the fact that the total number of pages in the Directory is only 1923, as against 2159 last year. Naturally in the present condition of affairs we can understand that Austria, Hungary, Germany, and Turkey are omitted. Probably in no case is any British medical man who may unfortunately happen to have remained in those countries able or even permitted to practise his profession. But what is of far greater importance is the omission of the large number of names in Asia, South, West, East and Central Africa, the American continents and adjacent islands, and Australia, the local lists of which in the Directory for 1914 occupied 22 out of the 23 pages in the local list of practitioners resident abroad. While making every allowance for the present cataclysmic state of affairs, with the inevitable permanent changes that must ultimately ensue, we earnestly hope that the missing portion will be restored next year, and that the editors will address themselves at once to that task. From some correspondence that appeared in our columns in the autumn of 1913 it is evident that efforts were then in contemplation to find a means of reducing the bulk of the Directory; but any attempt to effect this end by materially contracting its sphere of utility we feel convinced will be suicidal. The medical profession has long been proud of the complete and accurate service rendered to it by Churchill's "Medical Directory," and anything that would imperil its usefulness would be greatly deplored.

THE PROTECTION OF DRINKING-WATER SUPPLIES ON RAILWAYS.

THE extension of facilities for dining and sleeping on railway journeys has brought into increased importance the supply of pure water to restaurant and other cars. This matter is naturally of greater importance in America than it is with us owing to larger quantities of water drunk usually by the

American; and since the distances travelled are so great there is considerable probability that on any journey the supply will be renewed from several different sources, some of which may be of doubtful quality and many not under any sanitary control. The danger anticipated from this source has led to the appointment of a very strong commission by the American Treasury, which has fixed a bacteriological standard for the drinking-water supplied by common carriers in inter-state commerce.[1] The fixing of bacteriological standards of purity, or rather, as is pointed out by the commission, of permissible impurity, is more readily accepted in America than with us, as here we rely chiefly on sanitary control and inspection to attain the same ends. A very reasonable standard has been suggested and adopted, based on the number of organisms developing on agar at 37° C. in 24 hours, and on the absence of B. coli in at least four out of five 10 c.c. samples. Since the control or its enforcement rests ultimately on a legal basis it is satisfactory to find that the standard to be adopted, the methods to be employed in its determination, and the organism which for legal purposes is to be regarded as B. coli are all accurately defined. In these respects the report is instructive. In England there is no excuse for the use by any railway company of water from a polluted or uninspected source, and it is practically always drawn from a public water-supply. This does not, however, exclude danger from contamination during storage, and the publication of the report of the American commission may be of service in directing attention to this question of the purity of the water supplied by our railway companies.

A SUBJECT OF ARTIFICIAL PNEUMOTHORAX IN THE FIGHTING LINE.

AT a meeting of the Société Médicale des Hôpitaux of Paris on Oct. 30th M. E. Rist showed a man the subject of artificial pneumothorax who had taken part in the war. The case was remarkable not only as evidence of the value of a method of treatment of pulmonary tuberculosis which has rapidly gained in favour in recent years, but of the spirit which animates our gallant allies. The patient was a man, aged 28 years, who was by occupation a translator. In September, 1913, tuberculosis suddenly manifested itself by repeated and profuse hæmoptysis, fever, nocturnal sweats, and a loss in weight of 5 to 6 kilogrammes in a few weeks. He was admitted into hospital under the care of M. Léon Bernard, who found that there was already a cavity in the upper lobe of the right lung. The disease was therefore of a severe and rapid type. In October pneumothorax was induced. The result was excellent; the fever and hæmoptysis disappeared and weight was gained. After six weeks the patient went to the country for three months. On his return he was able to resume his occupation provided he submitted to insufflation of nitrogen every fortnight. When war was declared he joined the infantry regiment to which he belonged, and came to hospital for a final insufflation. For the first time a little pleural effusion was found to accompany the pneumothorax. On August 4th he was at Quesnoy. On the 10th he marched to Avesnes, a distance of 15 kilometres, from which he went to Lille. On the 20th he marched 53 kilometres to Béthune, with a two hours' halt at La Bassée. Two days later he marched by night to Arras, a distance of 20 kilometres. On the 27th he marched to Doullens, a distance of 16 kilometres. He was then very fatigued. Nevertheless he was in the open air all night. On the 28th he was in the fighting line in contact with the enemy and fired 32 shots, but a rapid retreat exhausted him, and after 50 minutes he fell down and was taken to hospital. On Sept. 14th he returned to Paris, and after five days' rest was able to resume his work. On Oct. 15th he came to hospital, where the pneumothorax was found to be perfectly preserved at a pressure of 3 centimetres of water. This relatively elevated pressure was due to an increase of the effusion. Aspiration was performed, a litre and a half of citrine fluid was withdrawn, and nitrogen was insufflated. At the time of the report the patient was robust, had no fever, and neither coughed nor expectorated. It would seem from the evidence supplied by this case that artificial pneumothorax enabled a man who had been severely attacked with tuberculosis to engage in the campaign for a month under arduous conditions and to regain his health afterwards.

SYPHILIS THE UBIQUITOUS.

IN former days, while the path of the infective agent of syphilis, as well as the identity of that agent itself, was still matter for conjecture rather than certain knowledge, there was much temptation to make a pathological process which seemed so subterranean in its ways responsible for many of the lesions whose origin was shrouded in mystery. To-day the field available for such speculation has been encroached upon and limited from several directions. Many of the mysteries of pathology have been made plain, the probability or otherwise of a syphilitic factor has become a much more sharply assessible quantity, and specific tests for that factor have become available. Among these tests the Wassermann reaction has taken the chief place, and it is this that Dr. Leonard Findlay and Dr. Madge Robertson[1] have applied to certain diseases in which they suspected a luetic element. They employed the Glasgow technique devised by Browning and quote figures which lend strong support to their advocacy of this method. Even so, however, they do not claim that it is absolutely accurate, and constitutes a sharp dividing line between syphilis and not syphilis; they recognise a borderland of cases in which the test yields indeterminate results even when it is repeated several times. One of the lesions that have been examined from this point of view is eczema oris as seen in children. Thirty-three such cases have been tested serologically, and a positive reaction has been obtained in every one, either in the patient's own blood or in one of his near relatives. Again, 11 cases of congenital heart disease have been similarly tested, with almost the same result; in 7 of the children the serum reacted positively, while in 2 others that of one or other of the parents did so. In 33 cases of spastic diplegia the results were less decisive, but here there were 13 positive cases and 2 doubtful ones. Finally, a series of 22 mentally deficient and epileptic children included no less than 13 positive and 2 doubtful results. In neither of these two latter groups was it possible to discover any clinical difference between the syphilitic and the non-syphilitic cases. In estimating the importance of these findings it should not be forgotten that the presence of a positive Wassermann test in the serum of an individual does not necessarily prove that every symptom of disease from which that person is suffering is due to a lesion of syphilitic origin. The class of child whose parents are syphilitic is closely coincident with the class in which mental deficiency is likely to be rife, and it is possible that if there were a test available coincidences with other infections than syphilis might be worked out. Nevertheless the work of Dr. Findlay and Dr. Robertson is both stimulating and suggestive, and might with advantage be applied to other childhood diseases of obscure origin. It should be noted that in many of their positive cases the children presented no clinical stigmata of syphilis.

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[1] Bacteriological Standard for Drinking-water, Public Health Reports, vol. xxix., p. 2959, Washington, 1914.

[1] Glasgow Medical Journal, December, 1914.

MEDICAL WOMEN FOR THE COMING SHORTAGE IN THE MEDICAL PROFESSION.

THE inevitable shortage of medical men which is resulting, and will for a considerable time continue to result, from the war affords matter for careful prevision. The great number of medical men who have already forsaken their civil sphere of activity for military service has already had its effect on hospital staffs, the various civil administrative medical staffs, and private practice. Moreover, there is little prospect that the toll will cease for some years to come. The wastage of war among those already engaged in military service will call for repeated drafts which also will become larger as the military medical establishment rises in numbers. The continuance of war will certainly withdraw a considerable number of young men from the medical, as from other, careers. With these considerations in view, the suggestion has been advanced in the *Times* by Dr. Mary Scharlieb that women of education and ability should turn their eyes to the medical profession, at least as an emergency measure, for, as she points out, women medical students need not of necessity be very young. Against the greater quickness of verbal memory and the superior plasticity of the very young Dr. Scharlieb insists that the trained mind, experience of life, and *savoir faire* of the more mature woman constitute an important set-off. The missionary field offers a special career for women also, while the fact that there are now several hospitals officered entirely by women in the theatre of war doing admittedly creditable and highly appreciated work amply demonstrates that there are many women at any rate who are quite equal to the strenuous demands of a medical career. Dr. Scharlieb's own experience of nearly 40 years justifies her in expressing the opinion that a medical career is capable of offering to a suitable woman candidate great happiness and satisfaction, combined with valuable opportunities for practical usefulness. We publish this week a letter signed by the President, Chairman, Dean, and Honorary Secretary of the London (Royal Free Hospital) School of Medicine for Women which coincides with Dr. Scharlieb's views, and forms a powerful appeal for the substantial endowment of an admirable institution. The school thoroughly deserves all the help that it seeks, alike for its past record and its future prospects.

WE regret to announce the sudden death of Professor A. van Gehuchten, professor of anatomy and neuropathology in the University of Louvain, which took place last week at Cambridge, where he was the guest of the University.

THE library and offices of the Royal Society of Medicine will be closed for the Christmas holidays from Thursday, Dec. 24th, to Monday, Dec. 28th, both days inclusive.

OWING to continued ill-health Dr. E. F. Bashford has been obliged to hand in to the executive committee his resignation of the post of General Superintendent of the Imperial Cancer Research Fund, and his resignation has been accepted.

THE TREATMENT OF WOUNDS IN WAR.

BY SIR ANTHONY A. BOWLBY, C.M.G.,
COLONEL, ARMY MEDICAL SERVICE; CONSULTING SURGEON TO THE EXPEDITIONARY FORCE.

General Headquarters, Expeditionary Force,
Nov. 30th, 1914.

WITH the Editor's permission I should like to join in the discussion opened by Sir Watson Cheyne at the recent meeting of the Medical Society on "The Treatment of Wounds in War,"[1] and I do so because for the last six weeks I have seen these wounds under different conditions from those in which they have been seen by the surgeons who took part in the debate. I spent my first three weeks in France at the base hospital at Rouen, but ever since the beginning of the "Battle of Ypres" I have been in daily attendance in one or other of the "clearing hospitals," or "clearing stations," as they are now to be called, to which the wounded are brought after being dressed in the field ambulances. They often arrive within a few hours of injury, but more frequently after a longer interval of 12 to 18 hours, and more rarely only after the lapse of one or two days. It must be remembered that in this war there is never an armistice for the burial of the dead or for the relief of the wounded, and it is usually only at night that our "stretcher-bearers" can remove men who cannot walk to the field ambulance. On the other hand, the motor ambulances cannot usually take the wounded on to the clearing hospitals by night because they would draw fire if they showed lights, and because the roads are almost impassable even by the light of day. The conditions of a field ambulance receiving many wounded at night quite preclude anything except the simplest dressings, or operations of urgency, and consequently nothing much is attempted before the day dawns. Soon after this the patients begin to be removed to the clearing hospitals. Men who are shot in our own attacks may lie outside our lines unaided even for days, for our own stretcher-bearers would be shot at once if they went out towards the German lines to help either British or German.

It must next be remembered that it has been the very worst cases—namely, the fractures of the femur and the leg bones, as well as the head and spine cases, and big shell wounds—which have been most delayed in getting to the field ambulances. For those men who were hit in the arms, or had slight flesh wounds, could get away with or without help in many instances, while these could not be moved without stretchers and bearers. And, in addition, again because they were so disabled, they have unavoidably been left lying in the wet mud of manured fields till their torn trousers and their wounds were so soaked in a mixture of blood and dirt that it was impossible even to get the torn muscles mechanically clean, let alone aseptic. In many cases also men have lost so much blood that they could not stand an operation on the chance of further loss by opening up wounds, and there is no doubt that their powers of resistance to microbic infection are in many cases greatly lowered by the combined effects of shock from the injury, from bleeding, and from exposure to cold and wet, with prolonged starvation. Such are the conditions in which many men are hit, and I will now turn to the nature of the wounds.

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[1] THE LANCET, Nov. 21st, 1914, pp. 1185, 1200.

First, rifle bullet wounds. The wounds inflicted in this war differ most materially from those of the South African war in two essentials. In the first place, the bullet is a different one, and even at long range it hardly ever makes the very small punctures which the old Mauser bullet made. These small punctures were the indication of a correspondingly slight injury to the parts beneath, and so also the much larger wounds of exit and entrance of the new bullet indicate a correspondingly severe injury too. Both Mr. Makins and I are quite convinced that these bullet wounds are not comparable to the wounds of the Boer war, and I can further testify that the effects of our own bullet on the wounded Germans I have seen are also much more severe than were those of the Lee-Metford in 1900, though not so severe as the German missile. In the next place, it is well known that the Boers habitually fought at very long range, whereas here the exact contrary is the case. Most of the attacks on the British have been made at night, so that large masses of men could get close to the trenches before being seen, and instead of rifles being fired at from 800 to 1500 yards most of the rifle fire has been within 100 or 200 yards, while the great majority has been when the men were almost in contact or but few yards apart. The effect of this has been to cause the most typical "explosive effects," so that I have seen the greater part of the muscles of the forearm torn and extruded through a huge rent in the skin and fascia, and that without the bones being injured, in a case where a man was accidentally shot at a distance of three or four yards, and where there could be no possible doubt of the nature of the injury. Of course, in such cases where the bones are struck as well the effects are infinitely worse, and large portions of the muscles are rent and torn away with vessels and nerves, while parts of long bones are shot out and fractures extend over the whole length of the shaft. One might well believe that these injuries were due to shells, but I have had abundant evidence that these immense wounds have been caused in very large numbers when the men were so closely engaged in combat that all shell fire had ceased, and when there was consequently no doubt of their origin. Almost all the experiences of bullet wounds in the Boer war have been set at naught, and one never sees a clean hole bored through the patella as I saw six times in South Africa, or a bullet wound through the head whose entrance or exit was difficult to find. The bullet of the machine gun is the same as the rifle bullet.

Second, shell wounds. These of course are to be further divided into wounds by shrapnel bullets and wounds by fragments of the shell case. The effect of the shrapnel bullet varies in proportion to the height of the shell from the ground when it explodes and the velocity of the shell at the same moment. If a shell bursts when it has lost its velocity and is high in the air, the bullets also are quite spent and may fail to penetrate even the clothing. But if the shell bursts close to a man and when its velocity is very great, the bullets are projected with great force, and often many of them strike a single man. In this way whole limbs may be shattered or even torn off, and the viscera may be so injured that death is practically instantaneous. In intermediate cases the bullet penetrates with more or less velocity, and may in the latter case be deviated or stopped by a bone. These bullets are much more likely to carry into the wound portions of clothing than is the rifle bullet, and as their velocity and penetration are less they much more often lodge, otherwise they present no special points of interest. Portions of the shell case itself, or even the whole case, may strike a man, and the effect is the same as that caused by the howitzer shells.

A howitzer shell differs from shrapnel in that it contains no bullets, but only a bursting charge, and this charge usually is made to detonate when the shell strikes the ground. The wounds are therefore caused by the portions into which shell is shattered by the explosion, and while some of them may weigh several pounds, others may be smaller than a bullet. The wounds caused by these shells are the most horrible of all, and are much more often fatal than shrapnel wounds. The limb is often so violently contused by the mass of jagged metal tearing its way through all obstruction, that far beyond the actual wound the tissues are so injured that they slough in large masses. Immense rents are torn in the fascia and skin, and through these a mass of mangled muscles, fascia, and bone is thrust, much of which has its vessels so extensively destroyed that it is all dead from the moment of the injury. Such a wound presents a mass of slate-coloured or blackened tissue, from which blood-stained serum exudes, but which bleeds little. The whole limb in many cases is swollen by the extravasation of blood, which spreads far and wide along the intermuscular planes, and which by the tension it causes may yet further seriously interfere with the circulation of the limb as a whole. Large portions of clothing covered with mud are frequently thrust deep amongst the torn muscles, and gravel or soil may also be carried in by the shell.

Such, then, is a short description of the conditions in which the wounds are inflicted and the nature of the wounds themselves as seen soon after their infliction. I will now turn briefly to the question of the principles of treatment.

In the first place, it must be realised that the exigencies of war do not ordinarily permit of any equipment at clearing stations except that which can be easily removed at the shortest notice, and, as no tents or huts can be supplied, use has to be made of any available space or building. The accommodation will vary from a barn or a railway waiting-room to a town hall, or a church, or a school, or a college. But in the recent battle each clearing station had to divide its staff between several such places, as no one of them was large enough by itself. There may be no time whatever to prepare or clean such a building before the wounded begin to arrive, and there is seldom much time afterwards, while every wounded man and orderly adds to the mud on the floors. There are ordinarily no beds, and the patients lie on the stretchers on which they were carried in, but we have always obtained in the towns some beds for each of the "stations." The clearing station is equipped to provide for 200 cases. but it will be some indication of the pressure if it is realised that a single station has on several occasions dressed in 24 hours more than 1000 wounded.

It is seldom possible to remove all their blood- and mud-stained uniform from the soldiers because there is but little to take its place, and in fractures of the lower extremity most of the dressings and splints have to be applied and the wounds dressed as the patient lies on his stretcher raised on trestles or benches for the purpose. One room is set apart for operations and an operating table and accessories are set up here, and a well-trained orderly, or two if they can be spared, sees to the necessary sterilisation of bowls and instruments, &c.

There seems to be an idea that "aseptic" surgery has been practised at the front, but, as far as the clearing stations are concerned, this is entirely a misapprehension. I have myself never given up "antiseptic" principles and treatment, and I was glad to find that in every clearing hospital antiseptics were always used.

The usual routine for all flesh wounds which are of the punctured variety, and for all abdominal or thoracic wounds, is to paint the skin far around with 2 per cent. iodine in spirit, and to wash the wound itself with either carbolic acid 1 in 20 to 1 in 40; iodine from 1 to 2 drachms to the pint; or strong peroxide of hydrogen. The dressings have always been "antiseptic," and have always consisted of bicyanide of mercury gauze and absorbent wool, for "plain" gauze is considered to be unsuitable and is not provided. If there has been a fracture without extensive laceration or comminution the same procedure is adopted. But if there has been an extensive fracture, especially of the leg or thigh, with laceration, then, whenever it has been possible, the patient has been anæsthetised and the wounds have been enlarged and washed out with antiseptics, and broken bone has been removed and drainage provided.

But the number of cases in which such prolonged treatment can be carried out is necessarily limited by the space for work at disposal of the surgeons and the number of patients waiting treatment. For so much time may be spent on a very few patients that the net result would be harm to the majority. The remedy for all this is not merely a question of increasing the number of the surgeons. That has already been done. When one has to deal with such great numbers of wounded as were dealt with here it is largely a question of space and accommodation, and the difficulties encountered were far more due to the want of large enough suitable buildings near the battle than to anything else. It is easy to say that additional buildings might be obtained as they were required, or that the buildings we did occupy might have been improved. Both these things were done, but no sooner were we getting comfortable in the little town of "B" than the enemy's shells drove us out in a great hurry, and we had to seek other and safer buildings some miles away to our great disadvantage. The same thing happened at "Y," and here unfortunately with loss of life to both officers and orderlies of the Royal Army Medical Corps. In yet a third town we have had to move because of re-arrangement of the fighting line with the French. All these events of course show how impossible it is to try to pitch anything like a "general hospital" close to the front, and if our "clearing stations" had not been very portable we should have undoubtedly been obliged to leave them behind in the hands of the enemy. War is war, and the surgery of war is not the surgery of peace, and never will be. The total number of wounded in this prolonged battle has been very great and the actual figures I am now able to give will show at a glance what the work has been like. At one time the total number of wounded treated at the clearing stations was at the rate of more than 1200 a day, and on one day was over 3000. If these had been equally distributed amongst all the clearing stations on our 40 miles of front and had all come in as room was made for them these difficulties would have been less; but, as a fact, the pressure came especially on three or four stations, and the bulk of the wounded usually came in at the rate of many hundreds within two or three hours. The result was that often every square yard of floor space was taken up by hundreds of stretchers holding wounded men, and many who had injured hands and forearms were at first unable to get sitting space. Yet all these men were always fed and cared for and dressed during the day on which they were admitted. When one thinks that in a London hospital with ample space and permanent equipment the resident staff are really very busy if they have 20 broken legs to treat in a day, and that an operating surgeon who gets through six or eight operations in an afternoon, with plenty of assistants, has done a hard day's work, it is possible to get a faint idea of what it is to treat a hundred or more compound fractures besides caring for five or six hundred other men shot through the chest, the abdomen, the head, &c., and many of whom required immediate attention. And besides the difficulties due to the mere numbers and want of space it must always be kept in mind that the whole object of a clearing hospital is temporarily to treat the patients and send them as soon as possible to the base hospital, so as to make room and be ready for more hundreds of patients from the next day's fighting. To-day's wounded must all be treated to-day, and the work of filling ambulances and trains must follow as soon as possible on the treatment of the wounds, so that what with unloading ambulances as they arrive and reloading them and the hospital trains, many hours' hard work have to be done by the orderlies and surgeons, in addition to treating the wounds. Yet one clearing hospital by working day and night treated more than 1000 cases on each of three consecutive days.

The fact that so many wounds suppurate has caused criticism of the methods adopted, but if methods are judged solely by results without accurate knowledge of the conditions, then mistakes are liable to occur. My own opinion is that, even granted there were abundant time and opportunity in all the clearing stations, the most skilful treatment would not prevent nearly all the worst wounds from suppurating. As I have already pointed out, these are the very patients whose arrival is liable to be unavoidably delayed because they are so severely injured; and their wounds are contaminated before arrival, not by the "clean dirt" of the sun-dried veld, but by a highly septic and manured soil. In these severe wounds also there is often so much necrosing soft tissue that even a slight infection would be difficult to overcome, let alone a massive infection of a large area. Yet I fully agree that many of these severe wounds should be opened up under an anæsthetic if conditions are sufficiently favourable, and Dr. Rowlands and I have already advocated this in a report on dry gangrene[2] issued some weeks ago.

But it may fairly be pointed out that even if wounds have suppurated there has been an almost complete absence in the base hospitals, as well as those in the front, of real pyæmia, and there have, of course, been no cases of true "hospital gangrene" anywhere. My own opinion is that the wounded as a whole have done very well indeed considering that the buildings were necessarily quite unprepared for surgical work when the battle began, that the men and their clothes were very dirty, that it was often impossible to bring in the wounded for many hours, that the wounds were commonly grossly contaminated before they could be treated, and, above all, that the injured parts were often quite devitalised by the violence to which they had been submitted.

I confess that I have nothing but admiration for the way in which difficulties have been overcome, and I am also convinced that the percentage of mortality amongst the wounded has been very low. But all the same I hope and think that all who have worked here have learned, and are learning, to improve their methods, so that if in the near future there are yet more wounded men, these may benefit by past experience as well as by the criticism and advice of our colleagues.

OUR ARMY'S TEETH.

By F. NEWLAND-PEDLEY, F.R.C.S. ENG., L.D.S.,
CONSULTING DENTAL SURGEON TO GUY'S HOSPITAL.

British Red Cross Hospital No. 2, Rouen, Dec. 12th.

THE arrival of the first dental officers for service with the troops in France was welcome, for they were very much needed. A great deal of improvement has been effected in the teeth of the army since the Boer War, and the authorities are now very anxious to do everything possible for the care of the teeth, but the question is, How is it to be done? An ideal way would be to mobilise the dental surgeons, making the unregistered men and mechanics act as assistants to the dental surgeons. In this way we could repair the teeth of the army even in the battlefield.

Another way would be carefully to inspect and treat the teeth of every child from the time the first tooth is cut, making dental neglect a punishable offence. This would give admirable results in 25 years, and we might expect additional benefits by heredity, but our needs in this war are immediate, for we want as many men as we can get and they are no use without teeth. Artificial teeth do not always yield good results and offer too great a chance to the malingerer. In a moment he may pocket his artificial teeth or get rid of them, and then be sent home amongst the dental failures. So the only thing to do is to take as many likely men as we can get, even if their teeth are a little below standard, remembering that in exceptional cases even an edentulous man may not suffer from indigestion. I once made a complete set of teeth for a ship's captain, and he always wore them excepting at meals when he removed them, as he had become accustomed to take his food, including biscuit, without teeth, and his digestion was quite satisfactory. This case is abnormal, and I only quote it to show that no rigid line can be drawn, and we can take some doubtful cases if we are prepared to send out a good corps of dental surgeons to do as much work as possible. But this dental corps must not be satisfied to take out teeth, but should be prepared to do a good day's work saving them. They should be organised, inspected, and should work under their own officers. The extractions do not take long and all available time should be devoted to treating exposed pulps and filling carious teeth. In this way a large number of men who otherwise would be lost can be patched up till their return at the end of the war when the dental departments can attend to them.

Reverting to the matter of artificial teeth, there is a wise provision of the authorities that sergeants and some others shall have a right to artificial teeth. The services of the local practitioners may be utilised for a certain number of these cases, saving their voyage home. When there are many wounded it is a great advantage to have "gas," for when men are weak they dread the dentist more than they feared a "Jack Johnson" when they were well. I applied for "gas" on these grounds, and it was sent out to me at once. My experiences at Deelfontein during the Boer war, and now at Rouen, are the basis on which I frame these suggestions. I came to Rouen as a volunteer dental surgeon nearly two months ago, and for the first six weeks I received cases from all quarters, Red Cross and general hospitals and convalescent camp included. If the Government is prepared to send out enough dental officers a large number of soldiers can be saved to the army, but they must come prepared to do the usual full day's work.

MEDICINE AND THE LAW.

A Judge on Professional Secrecy.

IN his charge to the grand jury in the case of Annie Hodgkiss, at the Birmingham Autumn Assizes, on Dec. 1st, Mr. Justice Avory made the following observations:—

> This woman has been committed on the coroner's inquisition on a charge of murder. The magistrates who have investigated the case have dismissed the charge. The deceased woman, according to the evidence, clearly died as the result of an illegal operation. Three medical men in succession attended her, and to one at least she confided the name of the person who performed the act. No information was given to the police or the authorities, and the woman died without any deposition being taken or without any statement being made by her on her death bed which could be used in a court of law. With the exception of a letter, which was found among deceased's papers, apparently making an appointment with the accused woman, there is absolutely no evidence against this accused person of having performed any operation upon the deceased woman, and the magistrates. taking that view, dismissed the charge. I need not remind you that any statement made by the deceased woman to a medical man is not evidence in a court of law. I can see no evidence, as the case now stands, which will justify you in finding a true bill against the prisoner for murder. The law provides that in the case of any person who is seriously ill, and who, in the opinion of a medical man, is not likely to recover, the evidence of such a person may be taken by a justice of the peace. Under circumstances like those in the present case, I cannot doubt

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[2] THE LANCET, Nov. 28th, 1914, p. 1265.

> that it is the duty of the medical man to communicate with the police or with the authorities in order that one or other of those steps may be taken for the purpose of assisting in the administration of justice. No one would wish to see disturbed the confidential relation which exists, and which must exist, between the medical man and his patient in order that the medical man may properly discharge his duty towards his patient; but there are cases, of which it appears to me that this was one, where the desire to preserve that confidence must be subordinated to the duty which is cast upon every good citizen to assist in the investigation of a serious crime such as is here imputed to this woman. In consequence of no information having been given it appears to me that there is no evidence whatever upon which this woman can properly be put upon her trial. I have been moved to make these observations because it has been brought to my notice that an opinion, to which I was a party some 20 years ago, when I was at the Bar, has been either misunderstood or misrepresented in a text-book of medical ethics, and I am anxious to remove any such misunderstanding if it exists. It may be the moral duty of the medical man, even in cases where the patient is not dying, or not unlikely to recover, to communicate with the authorities when he sees good reason to believe that a criminal offence has been committed. However that may be, I cannot doubt that in such a case as the present, where the woman was, in the opinion of the medical man, likely to die, and, therefore, her evidence was likely to be lost, it was his duty, and that some one of those gentlemen ought to have done it in this case.

We doubt if there will be any general agreement in the medical profession with Mr. Justice Avory's views.

A Panel Doctor's Fees Attached.

In the case of O'Driscoll *v.* Manchester Insurance Committee in the High Court of Justice, Mr. Justice Rowlatt, sitting without a jury, recently delivered an important judgment upon the question whether a panel doctor's fees can be attached. The executors of Dr. O'Driscoll, a deceased medical man, formerly in practice at Manchester, sold the goodwill of his practice to Mr. W. D. Sweeny, who was unable to pay the whole of the agreed purchase money, and against whom judgment was obtained for the balance due. In order to satisfy this judgment the plaintiffs obtained a conditional order attaching all moneys due from the committee to Mr. Sweeny as a member of the panel. Mr. Justice Rowlatt distinguished between the case of payments due to a member of the panel and the salaries of officers of the Crown, which are not liable to attachment, and held that as soon as moneys came into the hands of the Insurance Committee for distribution among the members of the panel a debt became due to every medical man who had done work under contract with the committee, and that the money thus becoming due was liable to attachment.

Action for Negligence in South Africa.

The Supreme Court of South Africa recently heard the appeal of Mr. John Mitchell against whom a jury had found a verdict for £100 damages on the ground of alleged negligence in performing an operation whereby a steel needle used with a Potain aspirator had been broken and remained in the patient's body. In allowing the appeal and giving judgment for the appellant, Mr. Mitchell, Sir James Rose-Innes, who presided, dwelt upon the necessity for proving, on behalf of a plaintiff in such a case, that the defendant did not employ reasonable care and skill, not that he did not bring to bear the highest possible degree of professional skill; also that a mistaken diagnosis, if proved, which had not been done, or the mere fact of an accident taking place, did not constitute proof of negligence. The appeal succeeded because the court was of the opinion that there was not sufficient evidence to justify reasonable men in finding that there was negligence. A feature in the case which received attention in the judgment delivered was that three specific questions were put to the jury at the trial: Was the defendant negligent? Did he negligently use an improper instrument? Was it the result of such negligence that the needle broke off and remained in the patient's body? The judge, however, at the same time told the jury that they were not bound to answer these questions, but might give a general verdict. They adopted the latter course, and Sir James Rose-Innes, very reasonably, treated this as meaning that they could not make up their minds as to any definite negligence upon which damages could be based, but desired to compensate the plaintiff for having a needle in his back.

Easy Purchase of Poisonous Drugs.

Dr. F. J. Waldo had occasion to explain at length to a jury recently in the City coroner's court the dangers of indulgence in cocaine and morphine, and to comment upon the ease with which they can be purchased from druggists who are willing to evade the formalities imposed by the Pharmacy Act. In the case before him the deceased, an Indian woman from Assam, had been living with a retired civil engineer for many years, and both were addicted to injecting morphine and cocaine. The man, who admitted having seen the deceased take 10 grains of cocaine in one day, had gone out and purchased a supply from a druggist in Holborn, without having to sign in any book kept for the purpose, and had returned to find his companion unconscious. The deceased had died at St. Bartholomew's Hospital from heart failure resulting from cocaine and morphine poisoning, and as there were bottles produced, which had apparently been purchased by the man or woman, containing the drugs but not bearing the labels prescribed by the law, Dr. Waldo suggested that the police should make inquiry and if possible take action against the vendors.

A Pernicious Impostor.

At the recent sessions of the Central Criminal Court sentence of three years' penal servitude was passed upon John Cubbin, who pleaded guilty to charges of giving certificates of the cause of death, not being a medical practitioner, and of committing perjury at inquests where he swore that he was qualified. His record was an unusually bad one. He had been fined in connexion with the giving of certificates and use of medical titles in 1900, and on subsequent occasions had been convicted of theft and of bigamy. He had been sentenced to five years' penal servitude in 1905, and had in 1913 been released from prison as a convict on licence, soon after which he had procured engagements first from one medical practitioner and then from another as an assistant. In the last instance, when he was using the name of Harrison and posing as a surgeon-general, he claimed to have succeeded to a baronetcy through the death of an imaginary relative. Medical men engaging assistants and locum-tenents should take the case of Cubbin as a warning. Proper inquiries are absolutely necessary in the absence of an introduction of a trustworthy character, and the Medical Register should also be consulted.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on Dec. 10th, Sir W. WATSON CHEYNE, the President, being in the chair.

The PRESIDENT reported that Sir Berkeley Moynihan had left England to take up his duties as a consulting surgeon to H.M. forces overseas; and it was resolved to grant leave of absence from the meetings of the Council to him for the period of his service abroad.

A report was read from the Board of Examiners in anatomy and physiology for the Fellowship stating that at the recent examination 57 candidates were examined, of whom 15 were approved and 42 rejected.

It was resolved to grant Diplomas of Fellowship to nine successful candidates.

In accordance with a report from the Board of Examiners in Dental Surgery it was resolved to grant the Licence in Dental Surgery to 35 successful candidates.

Examiners were appointed to the various examinations, the only new examiner being Dr. C. M. Hinds Howell, who was appointed examiner in physiology for the Second Conjoint Examination.

Mr. H. F. Waterhouse was re-elected a member of the Court of Examiners.

A report was received from the committee on the annual report of the Council dealing with the recent annual meeting, and in accordance with that report it was resolved that—

> As the matter referred to in the resolution carried at the annual meeting of the Fellows and Members was very fully considered by the Council so recently as March of this year, the Council see no advantage in reopening the discussion at the present time.

In accordance with the report of the committee of management, it was resolved to add the Newcastle-on-Tyne Royal Grammar School to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics.

A letter was read from the Professional Classes War Relief Council stating that it has been formed to deal with distress in the professional classes directly due to the war, and that it was decided at the last meeting of the council to ask the College to nominate a representative to serve on the council. The President was nominated.

A letter was read from Sir Henry Morris reporting the proceedings of the General Medical Council at their recent session. The letter was received and entered on the minutes, and the best thanks of the Council were given to Sir Henry Morris for his services as the representative of the College on the General Medical Council.

The PRESIDENT announced that he would deliver the Hunterian Oration on Monday, Feb. 15th, 1915, and it was resolved that there should be no Hunterian dinner.

A letter was read from Mr. F. G. Parsons stating that at the annual general meeting of the licensed teachers of anatomy in London, held on Nov. 26th, it was decided to ask the Council of the Royal College of Surgeons to help in taking further measures with a view to increasing the present inadequate supply of "subjects" for dissection, and to suggest a conference between representatives of the Council and the licensed teachers. A committee of the Council was appointed to meet the teachers.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been granted commissions as Surgeons for temporary service in His Majesty's Fleet:—Dated Dec. 5th: James Robertson Adam. Dated Dec. 7th: Ernest Farrant Cox, Frank Elliott, Edward Heffernan, William Archibald Mills, William John Morris, John Morrison, Horace Clulow Nixon, George Marshall Oakden, Augustus Kevin Roche, and Andrew Edgar Struthers.

Temporary Surgeon: A. P. Barrett to the *Newmarket* and for duty in Clacton.

ROYAL NAVAL VOLUNTEER RESERVE.

The following have been entered as Surgeon Probationers for temporary service:—C. McDonald, G. A. Paris, N. K. Henderson, W. O. Lodge, C. T. Helsham, W. W. K. Brown, W. O'G. Donoghue, P. G. S. Davis, K. M. Ross, W. J. McB. Ross, W. A. Turner, N. A. H. Turner, J. F. Smith, D. S. Prentice, and P. H. S. Smith.

ROYAL ARMY MEDICAL CORPS.

The undermentioned to be temporary Lieutenant-Colonels:—Dated Nov. 12th: Major Arthur E. J. Barker, 3rd London General Hospital, Territorial Force. Dated Nov. 21st: Sir Thomas Myles. Dated Nov. 22nd: Sir Charles Bent Ball, Bart., and Captain Sir William A. Lane, Bart., 2nd London (City of London) General Hospital, Territorial Force. Dated Dec. 1st: Major Sir Frederic S. Eve, 2nd London (City of London) General Hospital, Territorial Force, and Major James Swain, 2nd Southern General Hospital, Territorial Force. Dated Dec. 3rd: Major William Aldren Turner, 4th London General Hospital, Territorial Force.

The undermentioned to be temporary Lieutenants:—Dated Nov. 23rd, 1914: Keith Douglas Falconer, William Aloysius Murphy, Lawrence Weir Bain, Basil Cedric Ashton, Walter de Marchot Hill, and James MacGregor. Dated Nov. 24th: John Charles Venniker, Cunison Deans Rankin, Ronald Wingrave Duncan, Charles Jerome Alexander Nicolai Mercier, Crawford Lundie, Thomas Perrin, and Alexander Galletly. Dated Nov. 26th: Arthur Davies and John Spencer-Daniell. Dated Nov. 28th: William Hector Wotton. Dated Nov. 29th: Edwin FitzGerald O'Connor. Dated Nov. 30th: Lewis Hay Irving Bell, Holden Carson, Robert Joseph English, and Charles James Morton. Dated Dec. 1st: Joseph Elias Barnes, William Herbert Neil, Harold Dunkerley, Harold Francis Golding Noyes, Bartholomew Joseph Mullin, Ricardo Cope, Ralph Martin Soames, William Annandale Troup, Claude Harry Mills, Meredith Ffoulkes, John Neville Griffiths, Charles Howden Harbinson, John Francis O'Malley, John Harold Wilson, Robert Waller Willcocks, Arthur Norman Leeming, Neil Islay Sinclair, Walter Stuart Evans, Henry Michael Joseph, Tobias Rustat Hemsted Blake, Oscar Phillip Napier Pearn, John Arthur Noel Scott, John Finlayson McGill Sloan, and David Roberts Williams.

Lieutenant Edward A. Seagar relinquishes his temporary commission (dated Dec. 7th, 1914).

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank:—Henry S. A. Alexander, Arthur L. Anthony, John Deighton, Gerald C. Dixon, Hugh A. Fawcett, Cromwell Gamble, Herbert L. Garson, Gilbert A. Harvey, James R. C. Mackintosh, Mathew McKnight, Wilfrid W. Phillips, William K. Russell, Bertrand C. O. Sheridan, John S. Sloper, Harry N. Stafford, Robert I. Sullivan, Charles G. Waddington, John R. N. Warburton, George W. Watson, Colin Wilson, and William A. Young.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Robert Alfred Greenwood to be Captain.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd South Midland Field Ambulance: Frank Treadwell Boucher to be Lieutenant.

2nd Wessex Field Ambulance: Major Harry Compton Parsons, Reserve of Officers, New Zealand Medical Corps, to be Major (temporary). To be Captains (temporary): Gerald Dudley Freer, Leonard Leighton Hanham (late Captain, A.M.R.), and Harold Cotterell Adams. To be Lieutenants: William Thomas Pearse Meade-King, Henry Nunan Collier, and Charles Fenwick Backhouse.

3rd Wessex Field Ambulance: To be Lieutenants: Arthur Holdsworth Davis, Frederick Tooth, Frederick William Brunker, Philip McRitchie, Frank Lindsay Dickson, and Frederick Hardie.

1st London (City of London) General Hospital: Majors to be Lieutenant-Colonels: Archibald E. Garrod and Holburt J. Waring. Captains to be Majors: Percival Horton-Smith Hartley, C.V.O., and George E. Gask.

3rd London General Hospital: The undermentioned Lieutenants are seconded: George H. D. Webb and Edward Smeed.

4th London General Hospital: Major William A. Turner is seconded.

East Anglian Clearing Hospital: Lieutenant William Redpath to be Captain.

1st Highland Field Ambulance: Captain James Robertson to be Major (temporary). Bernard Gordon Beveridge to be Lieutenant.

3rd Highland Field Ambulance: Captain George Waterston Miller to be Major.

1st Welsh Field Ambulance: Captain Thomas Donovan to be Major.

2nd Welsh Field Ambulance: Captain Owen L. Rhys to be Lieutenant-Colonel (temporary). Barry Keyte Tenison Collins to be Lieutenant.

3rd Welsh Field Ambulance: Captain Daniel E. Evans to be Lieutenant-Colonel (temporary). The undermentioned to be Lieutenants: Richard James Isaac, Harry MacManus Soden, Joseph Carroll, and John Joseph Porter.

2nd Western General Hospital: Alfred Ernest Barclay to be Captain.

South Midland Clearing Hospital: Captains Charles B. Baxter and James L. Joyce, from Attached to Units other than Medical Units, to be Captains. Henry Gauntlett Langdale Smith to be Lieutenant.

London Mounted Brigade Field Ambulance: Captain James W. McIntosh to be Major (temporary). Lieutenant William F. Smartt to be Captain (temporary).

1st Home Counties Field Ambulance: Captain Arthur T. Falwasser to be Major (temporary).

1st London (City of London) Field Ambulance: Lieutenant David J. Scott and Lieutenant Archibald Leitch to be Captains (temporary).

3rd London (City of London) Field Ambulance: Major John A. Masters, from Attached to Units other than Medical Units, to be Lieutenant-Colonel (temporary). Captain George L. L. Lawson to be Major (temporary). Captain Myer Coplans is seconded. Lieutenant Robert Carswell to be Captain (temporary).

4th London Field Ambulance: Captain Thomas B. Layton to be Major (temporary). John Mackay Plews to be Lieutenant.

5th London Field Ambulance: The undermentioned Lieutenants to be Captains (temporary): John E. Sandilands and George Scott.

1st Northumbrian Field Ambulance: John Hamilton Barclay to be Lieutenant.

1st West Riding Field Ambulance: Lawrence Abel Mackenzie to be Lieutenant.

1st Western General Hospital: Ralph Lamb to be Lieutenant.

Northumbrian Clearing Hospital: John Stanley Manford (late Captain, 3rd Volunteer Battalion, The Northumberland Fusiliers) to be Captain. Richard Woodward Swayne to be Lieutenant.

1st East Anglian Field Ambulance: Arthur William Paterson to be Lieutenant.

2nd Eastern General Hospital: William Barrington Prowse to be Captain available for service on mobilisation.

1st North Midland Field Ambulance: Charles Brand Johnstone to be Lieutenant.

2nd North Midland Field Ambulance: Edward Crawford Trench Emerson to be Lieutenant.

2nd Northern General Hospital: Lieutenant George P. Anning, from Attached to Units other than Medical Units, to be Captain.

4th Northern General Hospital: Douglas Edward Darbyshire to be Captain.

2nd London Sanitary Company: Captain Charles M. Fegen to be Major (temporary). Lieutenant Frederick G. Caley to be Captain (temporary).

2nd London Clearing Hospital: Iorwerth Hubert Lloyd-Williams to be Lieutenant.

1st Wessex Field Ambulance: To be Lieutenants: Edmond Langley Meynell, Fred Ellis, Claude John Eddowes Bennett, and John Arthur Bell. Lieutenant Charles H. Maskew, from the 3rd Wessex Field Ambulance, to be Lieutenant.

Attached to Units other than Medical Units.—Major Thomas H. Chittenden, from the London Mounted Brigade Field Ambulance, to be Major. To be Captains: Lieutenant Robert Proudfoot and Bertram Maughan Footner (late Lieutenant, 5th Battalion, The South Staffordshire Regiment). To be Lieutenants: Lieutenant Leonard B. Baird (from 3rd West Lancashire Field Ambulance), Lieutenant Harold D. Lane (from the 3rd North Midland Field Ambulance), Thomas Louis de Courcy, Charles Gerald Tench, Louis Bruce Stringer, Ernest Edward Balman Landon, Lieutenant Herbert W. Joyce (from 1st North Midland Field Ambulance), John Carrington Marklove, and George Hooper Rains.

TERRITORIAL FORCE RESERVE.

Captains from the 1st Northern General Hospital to be Captains: Joseph C. Stewart and James W. Heslop.

DEATHS IN THE SERVICES.

Deputy Surgeon-General William Henry Harris, late I.M.S., at Shanklin, in his eighty-fifth year. He joined the Madras Medical Service in 1853 and attained the rank of deputy surgeon-general in 1881. He was formerly superintendent of the Lying-in Hospital and professor of midwifery in University College, Madras.

THE HEALTH OF THE NAVY.

The statistical report on the Health of the Navy for the year 1913 has just been issued by the Admiralty.[1] It is signed by the Medical Director-General, Sir Arthur May, K.C.B., and dated Oct. 14th, 1914. The brief introduction points out that in the present report the appendix, which formerly contained articles on professional subjects by medical officers in the Royal Navy, has been omitted owing to the intended publication of a quarterly naval medical journal. Owing to the general mobilisation of the Navy on August 1st, 1914, the remarks on the various returns, which were in course of compilation at that date, have been condensed as far as possible. Once again the Medical Director-General is able to report that the returns for the total force for the year under review show a continuous improvement in the general health of the Fleet as compared with the preceding five years. The total force, corrected for time, in the year 1913 was 126,830, and the total number of cases of disease and injury entered on the sick list was 77,438, giving a ratio of 610·56 per 1000, a decrease of 46·09 as compared with the average ratio for the preceding five years. The total number of cases of venereal disease recorded was 11,821, giving a satisfactory decrease of 22·85 per 1000 in the case ratio as compared with the average for the previous half decade. Five wounds in action were recorded, with one death. How different will the figures for 1914 look in this respect!

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

For obvious reasons the war must have seriously affected military journalism, and this probably accounts for the fact that the October issue of the Journal of the Royal Army Medical Corps has only reached us on the eve of going to press this week. It contains several interesting and topical articles, among others being Some Essential Factors in the Construction of Field Service and Expeditionary Rations, by Lieutenant-Colonel W. W. O. Beveridge, D.S.O.; Carbon Dioxide Snow with Special Reference to the Treatment of Oriental Cores, by Captain T. J. Mitchell; An Improved Method of Carrying a Wounded Man by a Single Bearer, by Captain D. B. McGrigor; A Modified System of Accounting for Medical and Surgical Supplies in Military Hospitals, and Army Biscuit Receipts.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8149 births and 5442 deaths were registered during the week ended Saturday, Dec. 12th. The annual rate of mortality in these towns, which had been 14·3, 16·6, and 15·3 per 1000 in the three preceding weeks, rose in the week under notice to 15·7 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 14·3, against 14·6 per 1000 in the metropolis. Among the several towns the death-rate last week ranged from 5·7 in Ilford, 6·1 in Darlington, 6·6 in Eastbourne, 6·8 in Aberdare, and 6·9 in Carlisle to 21·2 in York, 21·5 in Southampton, 21·9 in Hastings, 23·9 in Newcastle-on-Tyne, and 24·5 in Wigan.

The 5442 deaths from all causes were 113 in excess of the number in the previous week, and included 429 which were referred to the principal epidemic diseases, against 448 and 439 in the two preceding weeks. Of these 429 deaths, 181 resulted from measles, 71 from infantile diarrhœal diseases, 62 from diphtheria, 50 from whooping-cough, 48 from scarlet fever, and 17 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·2, against 1·3 per 1000 in each of the four preceding weeks. The deaths attributed to measles, which had been 148, 174, and 155 in the three preceding weeks, rose to 181 last week, and caused the highest annual death-rates of 1·4 in Plymouth and in Huddersfield, 1·7 in Liverpool, 1·9 in Birkenhead, 2·6 in Gateshead, 3·2 in Rotherham, 4·6 in Wigan, and 4·8 in Newcastle-on-Tyne. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 138, 102, and 94 in the three preceding weeks, further declined to 71 last week, and included 15 in London, and 5 each in Birmingham and Liverpool. The fatal cases of diphtheria, which had increased from 58 to 99 in the four preceding weeks, fell to 62 last week, and included 13 in London, 7 in Birmingham, 5 in Liverpool, and 3 each in Tottenham, Northampton, and Hull. The deaths attributed to whooping-cough, which had been 35, 42, and 48 in the three preceding weeks, further rose to 50 last week, of which 10 were registered in London, 5 in Bristol, 4 in Newcastle-on-Tyne, and 2 each in Portsmouth, Stoke-on-Trent, and Rhondda. The deaths referred to scarlet fever, which had been 28, 42, and 30 in the three preceding weeks, rose to 48 last week, which was the highest number recorded in any week of the current year, and included 11 in London, 5 in Sheffield, 4 in Liverpool, and 3 each in Birmingham, Manchester, and

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[1] Cd. 7683. Price 7½*d*. Wyman and Sons, Limited, Fetter-lane, E.C.

Preston. The fatal cases of enteric fever, which had been 17. 11, and 13 in the three preceding weeks, further rose to 17 last week, and included 2 each in London, Liverpool, Halifax, Bradford, and Newcastle-on-Tyne.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 5005, 5035, and 4980 at the end of the three preceding weeks, had further fallen to 4893 on Saturday last; 504 new cases were admitted during the week, against 627, 623, and 537 in the three preceding weeks. These hospitals also contained on Saturday last 1624 cases of diphtheria, 59 of enteric fever, 50 of measles, and 46 of whooping-cough, but not one of small-pox. The 1340 deaths from all causes in London were 15 in excess of the number in the previous week, and corresponded to an annual death-rate of 15·5 per 1000. The deaths referred to diseases of the respiratory system, which had been 203, 324, and 312 in the three preceding weeks, rose to 317 last week, and were 90 above the number recorded in the corresponding week of last year.

Of the 5442 deaths from all causes in the 97 towns, 206 resulted from different forms of violence and 456 were the subject of coroners' inquests, while 1485 occurred in public institutions. The causes of 47, or 0·9 per cent., were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Nottingham, and in 70 other smaller towns. Of the 47 uncertified causes of death, 12 were registered in Birmingham, 8 in Liverpool, 4 in Southampton, 3 in Gateshead, and 2 each in Manchester and Preston.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1163 births and 780 deaths were registered during the week ended Saturday, Dec. 12th. The annual rate of mortality in these towns, which had been 16·6, 18·4, and 18·3 per 1000 in the three preceding weeks, further declined to 17·7 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 16·2, against 14·3 per 1000 in the 97 large English towns. Among the several towns the death-rate ranged from 11·7 in Clydebank, 13·5 in Edinburgh, and 15·3 in Perth, to 20·4 in Falkirk, 20·5 in Ayr, and 23·5 in Kilmarnock.

The 780 deaths from all causes were 23 fewer than the number in the previous week, and included 76 which were referred to the principal epidemic diseases, against 82 and 79 in the two preceding weeks. Of these 76 deaths, 32 resulted from whooping-cough, 16 from diphtheria, 14 from scarlet fever, 8 from infantile diarrhœal diseases, 4 from enteric fever, and 2 from measles, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·7, against 1·2 per 1000 in the 97 large English towns. The deaths attributed to whooping-cough, which had increased from 7 to 30 in the four preceding weeks, further rose to 32 last week, of which 24 occurred in Glasgow and 2 each in Dundee and Motherwell. The deaths referred to diphtheria, which had been 17, 13, and 20 in the three preceding weeks, fell to 16 last week, and included 5 in Glasgow, 4 in Aberdeen, and 3 in Edinburgh. The fatal cases of scarlet fever, which had been 16, 25, and 15 in the three preceding weeks, were 14 last week, and included 9 in Glasgow. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had declined from 31 to 10 in the seven preceding weeks, further fell to 8 last week, of which 3 belonged to Glasgow and 2 to Dundee. The 4 deaths referred to enteric fever, of which 2 occurred in Edinburgh, were equal to the average in the earlier weeks of the quarter. The 2 fatal cases of measles were registered in Glasgow.

The deaths referred to diseases of the respiratory system, which had steadily increased from 62 to 163 in the 12 preceding weeks, fell to 154 in the week under notice; 23 deaths resulted from different forms of violence, against 39 and 34 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 585 births and 488 deaths were registered during the week ended Saturday, Dec. 12th. The annual rate of mortality in these towns, which had increased from 17·7 to 20·1 per 1000 in the four preceding weeks, further rose to 21·1 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 17·7, against corresponding rates of 14·3 and 16·2 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 23·2 in Dublin (against 15·5 in London and 18·5 in Glasgow), 20·8 in Belfast, 25·2 in Cork, 17·8 in Londonderry, 19·0 in Limerick, and 30·4 in Waterford, while in the 21 smaller towns the mean death-rate was 16·1 per 1000.

The 488 deaths from all causes were 24 in excess of the number in the previous week, and included 43 which were referred to the principal epidemic diseases, against 40 and 42 in the two preceding weeks. Of these 43 deaths, 17 resulted from infantile diarrhœal diseases, 12 from measles, 8 from scarlet fever, 3 from whooping-cough, 2 from diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·9, against corresponding rates of 1·2 and 1·7 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) atributed to diarrhœa and enteritis, which had been 13, 10, and 12 in the three preceding weeks, further rose to 17 last week, and included 9 in Dublin, 5 in Belfast, and 2 in Cork. The deaths referred to measles, which had been 10, 14, and 8 in the three preceding weeks, rose to 12 last week, and comprised 11 in Belfast and 1 in Cork. The fatal cases of scarlet fever, which had declined from 14 to 8 in the four preceding weeks, were again 8 last week, of which 3 were recorded in Belfast and 3 in Waterford. The 3 deaths attributed to whooping-cough, comprising 2 in Dublin and 1 in Belfast, were slightly below the average in the earlier weeks of the quarter. The fatal cases of diphtheria were registered in Dublin and Belfast, and that of enteric fever in Waterford. In addition to the above, a death from typhus occurred in Belfast and another in Cork.

The deaths referred to diseases of the respiratory system, which had been 85, 100, and 90 in the three preceding weeks, rose to 120 in the week under notice. Of the 488 deaths from all causes, 153, or 31 per cent., occurred in public institutions, and 8 resulted from various forms of violence. The causes of 16, or 3·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion did not exceed 0·9 per cent.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A School for Injured Soldiers.

THE Mayor of Lyons intends to ask the support of the Government for a scheme he has brought forward on behalf of mutilated soldiers the nature of whose injuries renders their return to their former occupation impracticable. He suggests the creation of a school of instruction whereby such soldiers may be taught free of charge, while receiving the necessary medical and other care, some occupation for which they may be individually fitted, so as to enable them to maintain themselves.

A Rest Canteen at the Gare du Nord.

The English Red Cross has opened a rest canteen in the basement of the Gare du Nord, Paris, containing beds and well-installed lavatories. Tea, coffee, milk, roast beef, sandwiches, and sweets may be obtained there.

Entertainments for Wounded Soldiers.

The custom is spreading of enlivening the tedium for the wounded in hospital by good music and readings. Recitations and concerts have been organised by a member of the Comédie Française at the Fondation Thier, now a Red Cross hospital, and at the Hôpital Pitié, and a concert is being organised for the hospital at the Grand Palais. On Dec. 5th, in Professor Pozzi's service at the Hôpital Broca, an entertainment was given in the wards for those severely wounded, at which Professor Pozzi with all his staff assisted. Convalescents were present on deck chairs, wearing their uniform again for the first time.

Antityphoid Vaccination in Paris.

Antityphoid vaccination has been compulsory throughout the French Army since March. In October the Prefect of the Seine publicly announced that young men of the class of 1915 could be vaccinated before joining their corps, in which case they would only have to present their tickets to the medical authorities. A double object is thus

ttained : first, a relaxation of the strain on
ıe Military Medical Service; and secondly, the
ımiliarisation of the general public with anti-
yphoid vaccination. A special free medical service
nder the direction of Dr. Maurange, and approved
y the military authorities of Paris, has been estab-
shed in large offices by the generosity of the
larquis de Vogüé, President of the Society of St.
obain. Four boards sit there at the same time,
ach consisting of a vaccinating surgeon and his
ssistant, with a woman secretary. Everyone to
e vaccinated hands his ticket to the secretary,
ho indicates on it to the medical man whether it
a case for a first, second, or third injection.
fter an application of tincture of iodine the vac-
nated person goes away with his ticket and a
ıchet of aspirin. Professor Vincent's method and
accine are used. On one day alone this sanitary
rvice vaccinated 4100 recruits of the class of 1915,
ıd also 500 civilians, men, women, and children.
he organisation can vaccinate from 600 to 800
ersons at a sitting. With the thorough technique
nployed few or no serious reactions have been
oted. A few subjects have complained of a slight
eariness in the arm or a passing headache;
ver is still more rare, hardly 1 or 2 per cent.
he results of antityphoid vaccination are no
nger open to discussion. Not a single case of
orbidity or a death has been observed among the
ccinated since its introduction. The vaccination
the class of 1916 is already under consideration,
e service being prepared to vaccinate every
cruit, to whose advantage it is to have it done
advance of joining his corps. When once anti-
phoid vaccination shall have become usual, the
ourge of typhoid will greatly diminish.
Dec. 12th.

Correspondence.

"Audi alteram partem."

THE MEDICAL STUDENT'S DUTY.

To the Editor of THE LANCET.

SIR,—In my presidential address to the General
edical Council on Nov. 24th I expressed the
inion that "the need for efficient physicians and
rgeons in the field and at home is not less urgent
an the need for efficient soldiers and sailors";
d I said that I had "felt it my duty to press this
nsideration on senior students, who, though they
ve nearly completed their curriculum, are ready
forego the prospect of early qualification and to
rol themselves straightway in the combatant
ces."[1]

To-day I have received a letter from Surgeon-
neral Sir Alfred Keogh, which contains the
lowing passage: "I think with you that the
ıior student is best fulfilling his duty to the
ıntry by getting his degree and then joining the
ny. The need for young qualified men will
come great, and I should regret that the supply
ould be diminished."

As I daily receive letters from senior students
d their parents who desire guidance in their
oice of apparently conflicting duties, I shall be
ateful if you will make known the opinion held
the War Office on the subject.

I am, Sir, yours faithfully,

DONALD MACALISTER,
President, General Medical Council.
edical Council Office, Oxford-street, W., Dec. 10th, 1914.

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[1] THE LANCET, Nov. 28th, 1914, p. 1280.

THE TREATMENT OF TETANUS.

To the Editor of THE LANCET.

SIR,—In 1910 I read a paper at the Royal Society of Medicine on the treatment of tetanus by the intraspinal injection of a 25 per cent. solution of magnesium sulphate. This is given in addition to the ordinary antitoxin treatment. In seven cases in which I used the method four recovered, three of them being very severe cases. In one of the fatal cases it is very doubtful if the fluid was injected intraspinally. I referred to 21 cases, with 12 recoveries.

Lumbar puncture is performed in the usual way and fluid withdrawn; this is replaced by the magnesium sulphate solution in the proportion of 1 c.c. for each 25 pounds of body weight. This makes about 5 to 6 c.c. for an ordinary adult. The lordosis and opisthotonos make this at times difficult. The body should be propped up slightly afterwards to prevent the fluid reaching the medulla and causing respiratory failure (in a recorded case artificial respiration was effective); the result is flaccidity of the lower limbs and abdominal muscles, and very often the trismus diminishes. With this relief to spasm sleep often comes on. It should be repeated as often as is necessary; sometimes it has to be repeated within the 24 hours. In one of my cases 16 injections were given without any bad results; some of the later injections were larger, but no cumulative effect was seen.

The treatment is not free from danger. The principal risk is respiratory failure; prolonged artificial respiration is the remedy for this. Bronchorrhœa has been recorded, but I have seen this in tetanus in a case treated only by antitoxin. Retention of urine is also common after this treatment. The spinal canal might be repunctured and the magnesium sulphate solution washed out if respiratory failure occurs. For the bronchorrhœa atropine hypodermically has been advised. I have advocated the method as an adjuvant to the ordinary antitoxin treatment as a means of obtaining rest and preventing exhaustion from the spasms whilst the body is overcoming the toxæmia. Magnesium sulphate has also been used subcutaneously and good results have been claimed for it, but I have no personal acquaintance with the methods.—I am, Sir, yours faithfully,

LLEWELLYN PHILLIPS,
Professor of Medicine in the Egyptian Government Medical School, Cairo.
Nov. 27th, 1914.

To the Editor of THE LANCET.

SIR,—In the very valuable and instructive discussion on the treatment of tetanus at the Medical Society of London, abstracted in THE LANCET of Dec. 12th, and also in your leading article in the same issue very little mention is made of anaphylaxis—I mean of true anaphylaxis as opposed to "serum sickness." It seems to me that a favourable opportunity is now offered, when so many injections of serum are being used for prophylactic and curative purposes in tetanus and other diseases, to observe this phenomenon should it occur.

All who have studied Professor Richet's work[1] must have been deeply impressed by his observations. Personally, I am inclined to think anaphylaxis is not a regular or even common phenomenon in the most favourable circumstances. Some years ago Dr. Murray Bligh and I made many observations and found it more difficult to obtain experimentally than we had been led to suppose by the writings of others. At the same time, of course, it may, and does, occur that an animal or human being is sensitised by a dose of foreign protein—e.g., serum—and dies suddenly on the administration subsequently of the smallest dose of the same protein after and within a certain time. It is, therefore, a matter of considerable importance that valuable lives should not be risked at the present time in the circumstances which now exist as regards serum production and therapy, when by simple measures all danger can be eliminated. Sera are given so often and with so little regard for the future—so far as the possibility of anaphylaxis is concerned—that it seems worth while to consider whether we should not take steps at once to mitigate the danger of which I have spoken.

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[1] English translation by J. Murray Bligh.

Sera are, I believe, at present practically all taken from immunised horses. Surely it would be a wiser course to immunise several different species of the larger animals with the various organisms against which horses are now commonly immunised. If this were done anaphylaxis, which is absolutely specific to the serum of any given species, could be certainly guarded against by using the sera of different animals, immunised against the same organisms, when more than one dose of serum was administered to the same individual after a short interval and within, say, 12 months, and each individual so treated should receive a card, or be marked in some way, for the instruction of those who treat him subsequently.

The matter is one of urgency and gravity; either there is no such thing as anaphylaxis or the course I have mentioned should immediately be adopted by those responsible for the preparation of the various sera.

Meanwhile, it may be worth while to remember that it is said that the fatal phenomena of anaphylaxis can be avoided if the serum be administered while the patient is under the influence of ether. I think we may disregard the statement that to produce anaphylaxis the two injections must be made in identical sites—subcutaneous, intrathecal, &c.

I should also like to allude to another point concerning the administration of sera. Susceptible subjects may be made seriously ill with "serum sickness"; but this can be prevented, or subsequently mitigated, by the administration of large doses of calcium salts by the mouth; three doses, each consisting of two ounces of the liq. calcii lactat. B.P. Codex in half a pint of water, should be administered with four-hourly intervals on the day on which the serum is administered or the "sickness" develops. I can testify to the value of calcium lactate in these circumstances from a personal experience.—I am, Sir, yours faithfully,

Liverpool, Dec. 14th, 1914. W. BLAIR BELL.

MEDICAL EDUCATION OF WOMEN IN LONDON.

To the Editor of THE LANCET.

SIR,—The increase in the number of women entering upon the study of medicine in London makes it urgently necessary to increase the laboratory accommodation of the London (Royal Free Hospital) School of Medicine for Women. This is not a war appeal, but it appears to the council of the school to be justified even at a time like this by the need of the country for more doctors in the near future, and by the fact that this school is the only one in London at which women can obtain a medical education.

The school deserves help for its work in the past. Founded 40 years ago, when there were only two women on the British Medical Register, there are now about 1000, of whom over 600 are former students of the school.

The school deserves help for the work it is doing now. The annual entry has doubled in the last six years. 212 students are in attendance, and if the present annual entry be maintained this number will rapidly rise to 300. It is a school of the University of London in the Faculty of Medicine. It has beautiful and suitable premises built 1899–1900, but they are not large enough for the present number of students. Additions to the laboratories, new research rooms, and more lecture rooms are essential. An adjoining site has been secured. Plans are prepared and approved, and building is to begin directly after Christmas.

The school deserves help for the work of the future. The demand for medical women constantly increases. In public departments throughout this kingdom, in sanatoria, in Poor-law institutions, in hospitals both in England and India, and as medical missionaries all over the world, they work in ever-growing numbers. At the present time medical women are urgently called upon to fill the places and supplement the work of the medical men serving with the army, and they are doing this both in this country and in France, so far as their numbers permit. This demand will be increased in the near future owing to the number of young men now joining the army, who might otherwise have studied medicine. Were twice as many to qualify as qualify now, all would be absorbed by these and other needs.

The council must raise £25,000 to pay for the additional buildings required and their equipment, and ask those interested in the work and medical education of women to provide this sum. Donations or promises should be sent to the London (Royal Free Hospital) School of Medicine for Women, 8, Hunter-street, W.C., addressed to the honorary treasurer, Mr. M. J. Henderson, who joins with us in the appeal.

We are, Sir, yours faithfully,
E. GARRETT-ANDERSON, President.
F. D. ACLAND, Chairman.
LOUISA B. ALDRICH-BLAKE, Dean.
MAY THORNE, Hon. Secretary.

London (Royal Free Hospital) School of Medicine for Women,
Dec. 14th, 1914.

THE ETIOLOGY OF LEPROSY.

To the Editor of THE LANCET.

SIR,—The letters in THE LANCET during August and September under the heading of "The Relation of Fish to Leprosy" induce me to raise briefly the question of the etiology of leprosy, which goes rather beyond the question of fish, be it fresh, salt, decomposed, or other.

It is really high time that the consideration of a subject of such engrossing importance should be restricted to the recording of facts and to analogical reasoning. What is being done throughout the world to sift the family history of the leper? Speaking for parts of the tropics where leprosy occurs, and of which I have personal experience, I can say that existing conditions are little likely to favour the acquisition of etiological facts. A lamentable process through the magistrate's court, sometimes a stay in a police cell, may be the committal portal for admission to the leper asylum; the medical officer to the institution has probably already a large district under his charge for general medical practice, and in the time devoted to the institution will be up to date no doubt in experimental drug treatment of his patients; an annual report is returned showing numbers of admissions and removals, and perhaps also the number of tea parties and magazines generously contributed by charity. But where is to be found the anamnesis in respect of a single case of leprosy?

Points regarding leprosy that are known, humanly, are: It is a disease of man; amongst animals the nearest approach to leprosy is found in the rat; there is sufficient evidence to justify the belief that it spreads from man to man; it has been believed to be a hereditary disease, a point indicative of contagion; the means of contagion are probably personally intimate; the incubation period of the disease is probably long; its occurrence in childhood is very rare; no proof is forthcoming of specific infection being derived from food of any sort whatever, though food as a vehicle of convection from man to man cannot be eliminated; experimentally at least, if not in nature, the bacilli have been demonstrated in certain blood-sucking "insects."

The inquiry has to be a domestic investigation on the same lines as are followed by the health officer in relation to typhoid, diphtheria, tuberculosis. When our colonies can boast of an organised department of preventive medicine we may expect accumulation of records which should demonstrate inevitably the etiology of leprosy; as inevitably as the microscope shows the bacillus. Until then, perhaps, the millions available in the hands of the great pioneers of private research might be directed to the organised field investigation of leprosy as they now are of other diseases.

A leper institution is an awful thing.

I am, Sir, yours faithfully,
ANGUS MACDONALD, M.D. Edin.,
Grenada, B.W.I., Nov. 23rd, 1914. Medical Officer in Charge.

THE MORPHOLOGY OF THE TYPES OF TUBERCLE BACILLI FOUND IN MAN.

To the Editor of THE LANCET.

SIR,—In his interesting article which appeared in THE LANCET of Nov. 21st, Dr. Horace R. Wilson calls attention to the importance of observing the morphological characters of the tubercle bacilli in a tuberculous case as an aid in prognosis.

For many years past the great importance in prognosis of such observations has been emphasised by Carl Spengler in his published researches on tuberculosis.[1] In the routine examination of tuberculous material by his methods careful attention is always given to the determination of the degree of injury manifested by the sheaths of the tubercle bacilli. Sheath injury may arise from causes other than an increase of the immunity of the patient; hence care must be taken to minimise errors due to such causes. In the lectures on the bacteriology of tuberculosis delivered by me during the past two years in the bacteriological laboratories of King's College much attention has been devoted to the qualitative investigation—as distinct from the usual quantitative examination—of tubercle bacilli in tuberculous material. It may be helpful to note that Spengler's "pikrin" method and the modifications of it introduced by Kirchenstein and by the writer are specially adapted for the qualitative and structural investigations referred to; the Ziehl method is unsuitable.

Dr. Wilson mentions that two distinctly different types of tubercle bacilli are found in human sputa—viz., Type 1, short, plump bacilli taking a uniform stain; Type 2, longer, thinner bacilli with clear (unstained) spaces numerous and well marked, the stain less deeply taken. It is important to note that the two types of tubercle bacilli which Spengler has described, and which he has isolated from human sputa, have characters quite different from Types 1 and 2 mentioned above. Spengler maintains that in most cases it is possible to isolate two types of tubercle bacilli from tuberculous man—viz., typus humanus brevis (Koch), and typus humano-longus (Spengler). From his investigations he has concluded that by his methods it is possible microscopically to distinguish between these two types if the bacilli are fully developed.[2] The characteristics of the types have been given in a comparative form in previous contributions on the subject[3]; the following is a brief summary of the more important of the morphological details: 1. Humanus brevis is a thin, short type of tubercle bacillus. 2. Humano-longus is thicker and longer than humanus brevis; it is a bovinoid type of tubercle bacillus, closely related to, but not identical with, the true bovine tubercle bacillus of cattle. Both types when uninjured and fully developed stain uniformly with the "pikrin" method. Splitter formation—the so-called "beading"—occurs in both types and is associated with degenerative changes in the bacillary sheath to which allusion has already been made.

Although, as Dr. Wilson states, some investigators have been unable by their methods to distinguish microscopically between the bovine and human types of tubercle bacilli as defined by these workers, nevertheless it must be noted that up to the present no researches have been conducted by them upon the two types of tubercle bacilli in tuberculous man as described by Spengler.

In future investigations it seems very desirable that the subject should be approached from Spengler's standpoint.

I am, Sir, yours faithfully,
WALTER H. FEARIS.
Cardiff and County Public Health Laboratory, Dec. 11th, 1914.

THE INCIDENCE OF PLAGUE IN EUROPE.

To the Editor of THE LANCET.

SIR,—My attention has been called to an article by Mr. C. Strickland entitled "The Incidence of Plague in Europe" in THE LANCET of Nov. 14th last, in which he states that the probability of a plague epizootic occurring among brown rats in this country is 250 times less in the summer than in the winter. This conclusion is based upon data extracted from reports made to the Local Government Board in connexion with the epizootics of rat plague which occurred in East Anglia in the winter of 1910 and the autumn of 1911 respectively.

Mr. Strickland's argument appears to be somewhat as follows: Martin and Rowland found in the winter of 1910 a flea-rate of 1 flea per rat associated with an 11 per cent. plague epizootic, while in the summer of 1911 Strickland and Merriman found a flea-rate of 4·5 associated with a 0·2 per cent. epizootic. Hence, in spite of the flea factor being 4·5/1 stronger in the summer than in the winter, the adverse factor (which he assumes to be lessened density of rat population) is so powerful that the epizootic resulting is 0·2/11 or 1/55, and thus the chances of infection are lessened nearly 250 times.

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[1] Spengler: Deutsche Medicinische Wochenschrift, 1907, No. 9.

[2] Spengler: Zeitschrift für Experimentelle Pathologie und Therapie, 1909, Band vi.; Deutsche Medicinische Wochenschrift, 1907, No. 3.

[3] W. H. Fearis: The Treatment of Tuberculosis by Means of Immune Substances (I.K.). An introduction to Spengler's work on Tuberculosis and Immunity (John Murray), p. 3 et seq. Brit. Med. Jour., March 14th, 1914, p. 625.

The conclusions arrived at by Mr. Strickland give quite an erroneous impression with regard to the relative severity of the two epizootics, as he has failed to take into consideration the widely different circumstances in which the two investigations were conducted. The figure "11 per cent." that he quotes from Martin and Rowland's paper refers to the percentage infection found among 123 rats collected from specially selected areas where epizootic plague was either suspected or actually known to exist at the time of the inquiry. The flea-rate per rat for this series was, moreover, not 1, as Mr. Strickland states, but actually 2·7. During the investigation in 1911 some 15,000 rats were examined from a wide area comprising over 200 parishes, only 19 of such parishes proving to be plague infected. From personal knowledge I have no hesitation in stating that in some of these infected districts the rat mortality from plague was very high. It is quite true that only 35 plague-infected rats actually came to hand during the inquiry, but this result was not due to any scarcity of infected material, but rather to the fact that as soon as plague was officially diagnosed in any parish the supply of rats brought to the laboratory for examination from that source was immediately cut off. From these considerations it is apparent that the figures "0·2 per cent." do not give any indication of the percentage infection in the infected areas and that the assumption contained in Mr. Strickland's paper is quite unjustified.

I am, Sir, yours faithfully,

RALPH ST. JOHN BROOKS.

Lister Institute, Chelsea Gardens, S.W., Dec. 15th, 1914.

ANTISEPTIC TREATMENT OF WOUNDS.

To the Editor of THE LANCET.

SIR,—I have read in THE LANCET of Nov. 21st an address on the Treatment of Wounds in War by Sir W. Watson Cheyne. This arresting paragraph occurs in the address:—

> Giving my own experience of naval cases, all the wounds which I have yet come across have been septic, some of them very badly so; I hear also that those who are working at the army base hospitals are having a large amount of sepsis in shell and shrapnel wounds.

At the conclusion of his address Sir W. Watson Cheyne says:—

> The question I have been referring to is one of tremendous importance, and I entreat you to give it your most earnest consideration ...... Any day we may hear of the death of our boys in battle. If they die on the field of battle, they at least die nobly in fighting for their country and for the safety of those they leave behind. Surely it makes it still harder for us to know that if they escape death on the field of battle, they may still, as the result of imperfect disinfection of the wounds, die from sepsis, or be maimed for life. I beg of you to consider this matter calmly, and logically, and without prejudice, and see that every possible means is taken to avoid this great calamity.

These moving and eloquent words of the President of the Royal College of Surgeons of England are my reasons for writing this letter to you. For many years the treatment of injuries has been my principal work in Lancashire. Until recent years, do what I would, some 10 per cent. or more of such injuries became infected. For a long period I endeavoured by mechanical means and by the aid of antiseptics to prevent the infection of skin wounds, compound fractures, burns, &c., and finally came to the conclusion that it was impossible mechanically to remove septic organisms from an open wound, or to ensure by the application of antiseptics the destruction of infecting bacteria by any means known to me then.

About 10 years ago I began a research having for its object the elimination of sepsis from recent wounds. Lister's first work on the treatment of compound fractures was the inspiration for this research. He stirred up with the blood carbolic acid so as to form a sort of paste which filled up the wound, and by this means he was successful in avoiding sepsis in a large percentage of cases. It will, I think, be admitted that healing by aseptic blood clot and granulation is the object to be aimed at in accidental injuries where there is so much destruction and injury of the tissues that primary union of the skin is impossible. The idea in my mind when I began the research was to utilise the exudate from a recent wound—e.g., blood serum, lymph, &c.—for the protection of the injured tissues. Could this exudate be acted upon by an antiseptic solution in such a manner as to prevent septic infection of the wound? After many trials and many disappointments with various antiseptics I at length hit upon a satisfactory method of treatment.

It is, of course, well known that mercuric chloride, $HgCl_2$, is one of the most powerful germicides, but this agent in the pure state in solution combines so readily, and, as it were, so firmly with albumin, forming an albuminate of mercury, that it is unsuitable and ineffective for the treatment of recent wounds. I quote from "The Chemical Basis of Pharmacology," Francis and Fortescue-Brickdale:—

> The degree of dissociation which a substance undergoes on solution in water can play an important part in its action on the organism. Paul and Kronig investigated the antiseptic power of mercuric chloride, using the spores of B. anthracis, and found that in equimolecular solutions, the chloride was the most powerful antiseptic, then the bromide, and that the cyanide had least action. This corresponds to the degree of dissociation which takes place in the three solutions. The same authors investigated the antiseptic powers of a solution of perchloride of mercury and common salt. Many years ago Bacelli, when advising intravenous injections of mercurial salts in cases of syphilis, employed a solution of the perchloride, mixed with sodium chloride in the proportion of 1 to 3, which he stated to be more effective in actual practice.
>
> Paul and Kronig have shown that the actual process is as follows: A double salt is formed ($HgCl_2NaCl$) which dissociates into positive sodium ions and negative complex ions of mercury and chlorine. The latter are inactive from an antiseptic point of view, but a certain amount of secondary dissociation of the complex negative ions occurs, resulting in the formation of the active mercury ions, though to a smaller extent than when an equimolecular solution of mercuric chloride alone is employed. The action is thus hindered, but in practice the increased solubility which is obtained by the addition of salt, more than counterbalances the decreased ionic dissociation.
>
> The action of a drug appears to depend upon its possessing (1) some group of atoms capable of exerting a specific effect on the cell, and (2) another group or side chain capable of entering into some kind of chemico-physical relationship with certain cells, whereby the first is enabled to produce its action.

In experimenting on these lines (but in ignorance until quite recently of these observations) it occurred to me that the addition of calcic chloride to a solution of mercuric and sodic chloride might cause more rapid coagulation of the exudate than the mercury and salt alone; and that the double salt $HgCl_2CaCl_2$ would combine more loosely with albumin.

This I found to be the case, and also that the antiseptic power of the molecule thus formed was increased considerably. The outcome of all my experiments, which are too tedious and too voluminous to recapitulate here, was a solution containing mercuric, sodic, calcic, and potassic chlorides. To this compound the short name "hydrion" may be applied. That is "hydr-(argyrum)ions."

The formula for the antiseptic I use is as follows:—

	Grains.	Grammes.
Mercuric chloride ($HgCl_2$) ...	4·375 ...	0·283
Calcic chloride ($CaCl_2$)	1·86 ...	0·12
Sodic chloride (NaCl)	34·76 ...	2·252
Potassic chloride (KCl)	0·075 ...	0·005

Hydrion is therefore a double chloride of mercury and calcium dissolved in normal saline solution with the addition of a trace of potassium chloride. These quantities are made up into a 40-grain solid tablet. This tablet is very hygroscopic and must be kept dry. One of these tablets dissolved in a pint of cold water (or two to one litre making a rather stronger solution) forms the ordinary antiseptic solution which I use habitually for recent wounds on the hands, feet, head, and exposed parts generally. A somewhat weaker solution should be used on delicate skins, or on a skin which is usually covered by clothing. A much stronger solution is used in the first immersion of a very dirty wound. This solution is a thoroughly efficient sterilising agent. It is highly labile, and its chemico-physical properties admit of rapid dissociation in the medium in which it is required to act. It has great diffusibility; its osmotic power is great, and its powers of uniting with albumin are such that it is capable of being incorporated with the exudate from a wound in such a manner as to cause rapid coagulation of the exudate, thus plugging the vessels and wound at once with a tenacious clot in which bacteria do not grow. This coagulum either destroys the bacteria which may be present in the wound or it inhibits their growth and development.

To give an example. A man sustains a crushed hand at his work by being caught in a machine. His fingers are severely lacerated, he has compound fracture of several bones, tendons are exposed, &c. No attempt whatever is made mechanically to cleanse the wound. Any obvious gross foreign bodies are removed; the hand is dipped for five minutes in the *cold* solution; the parts are very gently pressed into something like normal position; all active bleeding points are compressed with forceps—no ligatures should be used. The whole of the injured area—that is, every particle of raw surface—is carefully covered with thin *pure* gutta-percha tissue. A *small* amount of wood-wool wadding is saturated with the solution and firmly pressed over the gutta-percha tissue. The whole of the injured part is then covered with an ordinary bandage, the object aimed at being to put on the *minimum* of dressing. The bandage should not be tight, but it should be firm; and finally the hand (bandage and all) is dipped into the solution. Tablets are given to the patient, one of which he is told to dissolve in a pint of *cold* water and to immerse the hand (dressing and all) at intervals of six hours. Such a dressing, bloodstained and dirty as it may become, can be kept on for three or four days without any risk of infection of the wound. My practice when there is much oozing in a bad wound is to change the dressing in 24 hours and to wash the whole injured area in the solution, then to deal with the wound according to its requirements—to suture the skin, to adjust broken bones, suture tendons, &c. I never use a splint in such an injury, but I encourage the man to move his fingers from the very beginning. No swelling will occur, no redness nor pain; but the skin which has been subjected to the action of the solution will be wrinkled, bleached, and soft, so that the cuticle can be easily removed together with all dirt and foreign matter on the hand. The coagulated blood clot should be disturbed as little as possible. The continued application for days or weeks of the solution does not injure the living tissues, and it is remarkable how rapidly the wound will heal under its influence. It is essential to keep the raw surface moist with the solution and covered with the gutta-percha tissue throughout the healing process.

Wounds inflicted on the battlefield should, at the earliest possible moment, be washed with the solution of hydrion, covered with gutta-percha tissue and then a thin layer of wood-wool or gauze (taking great care that the latter is not in contact with the wound), with a not tight bandage over all; the whole dressing should be soaked in the solution or thoroughly wetted in it every six hours or so. This method is simple, cheap, quick, and efficient. It must be understood that my experiments have been made on wounds infected with the ordinary pyogenic bacteria. It may be that the more resistant anaerobic spore-bearing organisms, such as those of tetanus, spreading gangrene, or gas gangrene, may not be affected by hydrion. I do not know, but in cases where their presence is suspected I would advise a stronger solution, to be applied more frequently. My recent work shows more than 1000 consecutive cases of injuries where there has been a breach of the skin surface treated within 24 hours of the infliction of such an injury without one case of infection of the living tissues. The use of the guttapercha tissue is essential. It keeps the clotted exudate moist with the solution; it prevents evaporation; and, most important of all, *it does not stick* to the clot, so that when the dressing is removed *the clot is not pulled away* (as it is with a gauze or other cellulose dressing), nor are the healing granulations injured and made to bleed. It also protects the clot from direct contamination through the dressing, but it allows constant irrigation of the wound by capillary attraction and osmosis at the edges of the gutta-percha tissue.

I have not had time to verify all my references nor to acknowledge my indebtedness to the many authors I have consulted on this subject. In some further communication I hope you will allow me to rectify this omission in a paper in which I will go more thoroughly into the experimental data upon which my method is based. If those members of my profession who do me the honour to read this letter are inclined at first to exclaim with Naaman the Syrian: "Are not Abana and Pharpar, rivers of Damascus, better than all the waters of Israel?" I hope they will do as Naaman did on second thoughts. If they will try this method of dressing a recent wound I believe the results will surprise them. I shall be glad to give further information on the subject to any colleague who cares to write to me.

Hydrion can be obtained in tablet form from Messrs. Hough, Hoseason, and Co., Sun Buildings, Bridge-street, Manchester, who have taken endless trouble in the preparation of these tablets for me.

I am, Sir, yours faithfully,
Thomas Lissaman.

Mornington House, Bolton, Dec. 7th, 1914.

*** Combinations of the perchloride of mercury with the alkaline chlorides have been proposed for some time with the view of producing a powerful antiseptic effect without the irritating properties of the mercuric salt alone; while so combined mercury does not quickly coagulate the albumin. The addition of calcium cloride is, however, a possibly important suggestion, having regard to its effect on the coagulability of the blood, and a looser combination with albumin is formed than when the perchloride is used alone.—Ed. L.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

During the last week the organisation of the Fund has been proceeded with steadily, and promises of coöperation have been received from universities, provincial centres, and individual medical men and pharmacists. A comprehensive scheme is at present being organised to appeal to all the doctors and pharmacists of Scotland on behalf of their Belgian brethren. The proposal here is for a large committee with representatives of the universities, the Royal Colleges of Physicians and Surgeons, Royal Faculty, and the Society of Pharmacists of Scotland. Progress is being made, we understand, with the movement. From Dublin we publish a long list of subscriptions received or promised, which has been forwarded to us from the Royal College of Physicians of Ireland. In Belfast the Ulster Medical Society and the Ulster branch of the British Medical Association are proposing to draw the attention of their members to the movement.

At a meeting of the Executive Committee of the Fund, held at the offices of the British Medical Association on Thursday, Dec. 10th, Mr. E. T. Neathercoat, Vice-President of the Pharmaceutical Society of Great Britain, was elected a member of the Committee, and the following nominations upon the General Committee, made by the Pharmaceutical Society of Great Britain, were accepted unanimously:—Mr. Edmund White, President of the Pharmaceutical Society of Great Britain; Mr. J. H. Cuff, Mr. W. H. Gibson, Mr. R. L. Gifford, Mr. A. Hagon, Mr. P. F. Rowsell, Mr. G. E. Pearson (Messrs. Burroughs, Wellcome, and Co.), Mr. F. P. Sargeant, Mr. W. S. Glyn-Jones, M.P., Mr. J. C. Umney, Mr. D. Gilmour, Mr. J. P. Gilmour, Mr. W. L. Currie, Mr. T. Guthrie, and Mr. J. Rutherford Hill. The addition to the General Committee also of the names of Mr. Lynn Thomas, Vice-Chancellor of the University of Wales, and Professor E. W. Hope, of Liverpool, was agreed to.

Address by Professor Jacobs.

A meeting of the Edinburgh Obstetrical Society was held on Dec. 9th, Sir J. Halliday Croom, the President, being in the chair, when Professor Jacobs, of Brussels, gave an address on "The Position of the Medical Profession in Belgium." A reception of the Fellows to welcome Professor Jacobs was given by the President, who, in introducing Professor Jacobs, eulogised the action of Belgium and referred to the great losses it had incurred in coming to the help of the Allies.

Professor Jacobs, who was most cordially received, recounted the sufferings of his country in this terrible war. When the Belgians heard of the declaration of war they to a man decided to defend their neutrality; they considered it was their duty to do so. Their country had suffered terribly. Doctors had not been spared; they were also bearing their heavy share. They were devoting their care, and if necessary their lives, to their country. But they had no medical stores; their homes and pharmacies were ruined. Was it realised what they were suffering? They were trying faithfully to fulfil their duty by remaining at their post. Some were carrying on their practice in ruined buildings. They were endeavouring to sustain their wives and children, and at the same time doing their best to alleviate the misery among them. Some doctors had had to work as navvies. Some had had to sell what had been spared by the Germans. Professor Jacobs had met a doctor who had not eaten bread for a fortnight, living only on potatoes. Some had to lie on straw for beds. One had his only pair of boots on his feet, and these falling to pieces; others had only torn garments to clothe themselves with. One had to live for three days on wayside herbs, and his wife shared his fate. Another was searching in vain for six or seven days for his wife and family in the country around. Some doctors had been imprisoned as hostages; some had been shot. One, the burgomaster of a place near Liége, was seized, had his ears cut off, his eyes gouged out, and was then shot; afterwards his head was carried on the end of the lance of an Uhlan through the town. There were widows and orphans of doctors deprived of everything. A doctor and his son were shot before the eyes of the wife. As head of the Belgian Red Cross Professor Jacobs visited a chateau, but found the Red Cross had not been respected; it had been completely destroyed and the bodies of six girls, aged from 10 to 17, were lying on the lawn. A convent containing 60 sisters had been entered by the German soldiers and every one had been violated; on the evidence of the doctor to the institution 25 were pregnant. Professor Jacobs had operated on the wife of a doctor living near Namur. Three weeks after the operation when convalescing and still in bed their house was entered by German soldiers; she was raped by seven of them and died two days afterwards. Many civilians had been shot; some places had only a few inhabitants left out of hundreds. In Dinant more than 900 had been shot and the town razed. Professor Jacobs was in his house in Brussels when the Germans occupied the city, and the military were disposed in the houses. Some came to his house and he recognised German professors whom he had some acquaintance with. He could not shake hands with them, but gave them beds. They left early in the morning, and on entering his operating room he found they had stolen his instruments. Professor Jacobs closed his address with some lantern slides of the ruins of Louvain and other places.

The Peterborough Pharmacists' Association has led the way on behalf of pharmaceutical associations with a contribution of £7 2*s.*, and it is to be hoped that every association throughout Great Britain will follow this lead. The Pharmaceutical Society of Great Britain has sent a generous contribution of £50. A register of all Belgian pharmacists in Great Britain has been compiled, and although perhaps somewhat imperfect at the moment is being steadily amended day by day. A very large number of Belgian pharmacists have personally called on the secretary of the Pharmaceutical Society at 17, Bloomsbury-square, and for many of them work has been found. There are, however, several names registered as wanting situations, and any pharmacist who can offer suitable work should communicate with Mr. W. J. Uglow Woolcock.

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund and crossed Lloyd's Bank, Limited. These will be acknowledged by post direct, and a list will appear in THE LANCET weekly.

The following subscriptions to the Fund have been received by Dr. Des Vœux up to Tuesday evening last, in addition to subscriptions amounting to £1444 previously acknowledged :—

	£	*s.*	*d.*
Dr. J. D. Malcolm	2	2	0
Mr. Stanley Boyd	5	0	0
Dr. E. P. Wrinch	1	1	0
Dr. W. E. M. Wright	1	1	0
Dr. F. W. Mason	1	1	0
Sir Alfred Pearce Gould	25	0	0
Dr. Eveline Cargill	2	2	0
Mr. Abram Leach	3	3	0
Mr. Irwin B. Richardson	1	1	0
Dr. J. F. Weir	0	10	6
Dr. J. C. McVail	5	5	0
Dr. G. N. Stephen	2	2	0
Dr. W. A. Bond	3	3	0
Drs. Macfie and Gray	5	5	0
Mr. E. Treacher Collins	3	3	0
Mr. F. B. Bannister, R.N.	2	0	0
Mr. F. R. Todd	5	0	0
Dr. A. Kempe	1	1	0
Dr. J. P. Scatchard	2	2	0
Dr. A. E. Larking	2	2	0
Dr. D. Dickson	1	1	0
Dr. Lewis Reynolds	1	1	0
Mr. W. F. Haslam	2	2	0
Lady Betty Leslie-Melville	25	0	0
Dr. R. P. Jones	2	2	0
W. Herts Division of B.M.A. (per Mr. K. J. Aveling, hon. sec.)	10	7	0
Mr. F. R. U. Atkinson	1	1	0
Dr. J. Stewart	2	2	0
Mr. G. F. Gubbin	1	0	0
Mr. Sangster	2	0	0
Mr. Meredith Townsend	2	0	0
Mr. R. H. Parker	1	1	0
Mr. W. A. Bell	2	2	0
Peterborough and District Pharmacists' Belgian Refugee Committee	7	2	0
Mr. F. Pilkington Sargeant	5	0	0
Mr. W. J. Uglow Woolcock	5	0	0
Mr. H. S. Phillips	2	2	0
Mr. J. H. Cuff	2	2	0
Mr. R. L. Gifford	1	1	0
Mr. E. F. Young	1	1	0
Mr. A. Smith	1	0	0
Mr. R. Anderson	0	10	0
Mr. W. Warren	0	5	0
Mr. G. A. G. Simpson	5	5	0
Dr. Charles Burland	1	1	0
Dr. G. A. Sutherland	2	2	0
Mr. J. P. Fennell	1	1	0
Dr. J. H. Philpot	5	5	0
Dr. F. A. Hepworth	1	0	0
Dr. J. Taylor	5	0	0
Dr. A. C. Inman	3	0	0
"A Poor Doctor"	0	3	0
Dr. J. H. Sequeira	3	3	0

	£	*s.*	*d.*
Mid-Cheshire Division of B.M.A. (per Dr. A. T. Blease)	1	1	0
Dr. and Mrs. A. P. Pugh	1	1	0
Sir John Tweedy	5	5	0
Dr. J. W. Grange	3	3	0
Dr. J. M. Clarke	2	2	0
Dr. W. S. Syme	2	2	0
Sir Frederic Eve	15	0	0
Dr. Luff	3	3	0
Dr. M. Tench	1	1	0
Mr. C. H. Fagge	5	5	0
Dr. J. W. Russell	5	0	0
Mr. H. R. Ley	5	0	0
Dr. T. M. Callender	1	1	0
"St. Alban's" Medical Club (per Mr. T. S. Townsend, Treasurer)	26	5	0
H. B. S.	3	0	0
Dr. S. Phillips	5	0	0
Surgeon-General Sir Lionel Spencer	5	0	0
Miss Aird	1	1	0
Dr. J. G. Warren	5	0	0
Dr. H. W. Webster	2	2	0
Dr. W. S. A. Griffith	10	0	0
Colonel George Wilson, R.A.M.C.	2	2	0
Dr. J. Braithwaite	1	1	0
Dr. N. F. Lock	1	1	0
Dr. S S. Rendall	1	1	0
Dr. W. H. Smith	1	1	0
Dr. O. L. Theobald	1	1	0
Dr. F. Vicars	1	1	0
Dr. Given	2	2	0
Dr. J. W. Eastwood	1	1	0
Mr. C. B. Fairbank	2	2	0
Mr. H. A. Wanklyn	1	1	0
Dr. A. D. Jules	1	1	0
Dr. F. Cassidi	5	0	0
Dr. Fiske	1	1	0
Dr. A. P. Gibbons	2	2	0
Dr. H. R. Andrews	5	5	0
Dr. J. W. Carr	5	0	0
Dr. T. E. Honey	3	3	0
Mr. R. B. Wall	2	2	0
Dr. Burgess	2	2	0
Mr. E. T. Neathercoat	5	0	0
Mr. Walter Hills	5	0	0
Mr. F. A. Rogers	2	2	0
Association of Women Pharmacists (per Miss N. Renouf)	2	2	0
Mr. W. Gowen Cross	2	2	0
Mr. J. E. Edwards	0	10	0
Mr. S. Summers	0	5	0
The Pharmaceutical Society of Great Britain	50	0	0
Mr. G. Lapthorn	2	2	0

By an error the addition of the letter "k" was made to the name of Dr. Mary Acworth in the list published last week.

THE IRISH COMMITTEE.

The following subscriptions have been received by the Registrar of the Royal College of Physicians of Ireland, Dr. T. P. C. Kirkpatrick, who is acting jointly with Dr. C. M. Benson as honorary treasurer and secretary of the Fund in Ireland :—

	£	*s.*	*d.*
J. G. Allen	1	1	0
S. H. B. Allison	1	1	0
Dora E. Allman	1	1	0
Anon	1	1	0
G. Atkins	3	3	0
A. Atock	2	2	0
C. A. Ball	2	2	0
Sir C. B. Ball	5	5	0
C. Preston Ball	2	2	0
A. P. Barry	1	1	0
Jerome Barry	0	10	0
John M. Barry	1	0	0
Joseph Beatty	2	2	0
Wallace Beatty	5	5	0
C. M. Benson	5	5	0
Sir Hawtrey Benson	2	2	0
Henry Bewley	10	10	0
His Hon. Judge Bird	5	0	0
A. Birmingham	1	0	0
Alexander Blayney	10	10	0
J. Booth	1	1	0
Wm. Bradley	1	0	0
F. Brannan	1	0	0
C. Brew (Bray)	1	1	0
J. Mitchell Bruce	5	5	0
L. Buchanan	1	1	0
Cornelius Buckley	1	1	0
Eugene Byrne	2	2	0
H. U. Byrne	2	2	0
Sir Charles Cameron	5	0	0
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Wm. Clifford	1	1	0
The Clinical Club	10	10	0
M. F. Cahill	2	0	0
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T. J. Considine	2	0	0
MacDowel Cosgrave, P.R.C.P.I.	10	10	0
J. Galwey Cooke	10	0	0
George Cope	1	1	0
S. M. Cowe	2	2	0
Rt. Hon. M. F. Cox, P.C.	5	5	0
F. C. Crawley	5	5	0
J. T. Creery	1	1	0
W. M. Crofton	5	5	0
Albert Croly	5	5	0
J. D. Cummins	1	0	0
W. A. Cummins	1	1	0
N. Cunningham	1	1	0
P. J. Cusack	1	1	0
M. E. Cussen	1	1	0
J. T. Daniel	2	2	0
W. J. Dargan	2	2	0
Henry Davis	1	1	0
J. H. Davys	1	1	0
W. R. and Mrs. Dawson	3	3	0
J. Marshall Day	2	2	0
O'C. J. De la Hoyde	1	1	0
Martin Dempsey	3	3	0
P. J. Dempsey	5	5	0
Arthur Dobbs	1	1	0
J. A. Dockeray	1	1	0
Patrick Dolan	1	1	0
P. Donnellan	1	0	0
J. E. Dormer	1	1	0
Th. Drapes	1	1	0
H. C. Drury	2	2	0
Frank J. Dunne	2	2	0
Conway Dwyer, P.R.C.S. Irel.	10	10	0
H. C. Earl	2	2	0
J. T. Elliott	1	1	0
F. C. Ellison	2	2	0
Miss A. S. Eustace	1	0	0
H. M. Eustace	3	3	0
W. N. Eustace	2	2	0
N. M. Falkiner	2	2	0
E. M. Fannin	2	2	0
A. A. Ferguson	1	1	0
P. Ferris	1	1	0
Victor G. Fielden	2	2	0
J. Magee Finny	2	2	0
C. E. FitzGerald	10	10	0
J. F. FitzGerald	1	1	0
J. J. FitzGerald	1	0	0
Gibbon FitzGibbon	2	2	0
T. P. Flynn	1	0	0
Wm. Fottrell	2	0	0
Wm. Frier	1	1	0
A. Fullerton	2	2	0
Nicholas Furlong	1	1	0
W. Verner Furlong	5	5	0
J. Geraghty	1	1	0
W. J. Gibson	1	1	0
T. C. Gilmore	1	0	0
G. J. Goldie	5	5	0
T. D. Good	1	0	0
S. T. Gordon	1	1	0

	£	*s.*	*d.*
T. K. Greenfield	1	1	0
H. C. Groves	1	1	0
C. Denys Hanan	3	3	0
Allan H. Hanley, C.M.G.	2	2	0
Richard Hatch	1	1	0
M. R. J. Hayes	2	2	0
M. J. Hayes	1	0	0
James Henderson	2	2	0
Eileen A. Hewitt	1	0	0
T. D. Homan	1	1	0
S. Wallace Hudson	1	1	0
W. Brown Hunter	2	2	0
J. W. H. Jellett	1	1	0
Deputy Surgeon-General Joynt	5	5	0
R. Lane Joynt	5	5	0
Miss Kavanagh	0	10	0
M. Kearney	1	0	0
J. F. Keenan	1	0	0
G. Kelly	1	1	0
W. P. Kelly	0	10	0
J. B. Kelso	0	10	6
Hugh T. J. Kennedy	1	1	0
P. J. Kiernan	1	1	0
J. W. Killen	2	2	0
W. M. Killen	2	2	0
R. J. Kinkead	1	1	0
T. P. C. Kirkpatrick	10	10	0
M. O'Malley Knott	2	2	0
Wm. Lalor	2	0	0
S. A. Lane	2	0	0
E. Lapper	2	2	0
W. F. Law	1	1	0
W. K. Law	5	0	0
R. R. Leeper	2	2	0
W. R. Lemon	1	1	0
Sir John Lentaigne	10	10	0
J. A. Lindsay	5	5	0
James Little	21	0	0
M. E. Lynch	1	1	0
Thomas Lyndon	1	1	0
Anthony M'Bride	0	10	6
P. A. M'Carthy	1	0	0
James M'Closkey	1	1	0
Joseph M'Donnell	1	1	0
Maurice G. M'Elligott (Listowel)	3	3	0
David M'Eniry	2	2	0
Thomas M. M'Evoy	2	2	0
Dr. MacGrath (Dunfanaghy)	2	2	0
F. P. M'Laughlin	3	3	0
E. P. M'Loughlin	10	10	0
John M'Michael	1	10	0
J. T. Macnamara	1	1	0
P. J. Macnamara	1	1	0
R. Blake M'Vittie	2	2	0
J. C. M'Walter	2	0	0
E. J. M'Weeney	2	2	0
E. Magennis	1	1	0
W. A. Magill	2	0	0
William J. Maguire	1	1	0
R. B. Mahon	1	1	0
M. J. Malone	2	2	0
Mrs. M. J. Malone	1	0	0
Mrs. F. Manning	1	1	0
F. C. Martley	2	2	0
Everina S. J. Massy	5	5	0
J. A. Matson	1	1	0
Euphan M. Maxwell	1	1	0
G. Pugin Meldon	2	2	0
P. Merrin	1	1	0
W. K. Miley	5	0	0
A. Nixon Montgomery	1	1	0
H. C. Mooney	2	2	0
Edward E. Moore	1	1	0
George P. Moore	3	3	0
Sir John W. Moore	5	5	0
T. G. Moorhead	5	5	0
T. H. Moorhead	2	2	0
J. P. Moran	1	1	0
J. S. Morrow	1	1	0
William A. Morton	2	2	0
Edward Murphy	2	0	0
John Murphy, F.R.C.P.I.	5	5	0
P. F. Murphy	1	1	0
H. Murray	1	1	0
George Myles	1	0	0
Thomas Neill	1	0	0
George E. Nesbitt	2	2	0
J. A. Oakshott	2	2	0
C. M. O'Brien	5	5	0
Daniel J. O'Brien	1	1	0
Kennedy J. O'Brien	1	0	0
Joseph O'Carroll	10	10	0
Peter H. O'Connell	1	0	0
Daniel M. O'Connor	1	0	0

[*Continued on next page.*

	£	s.	d.
W. J. O'Donnell	1	0	0
William O'Donnell ...	1	0	0
John O'Donoghue... ...	1	1	0
The Odontoblast Club ...	10	10	0
J. Conor O'Farrell ...	2	2	0
William H. O' Meara ...	1	1	0
Francis J. O'Reilly ...	1	0	0
Sir Lambert Ormsby ...	5	5	0
Cecil Orpin	5	0	0
Gawin Orr	2	2	0
John J. O'Sullivan ...	1	1	0
George E. Palmer... ...	1	1	0
Joseph Petit	1	0	0
Edward Phillips	1	1	0
Blacker C. Powell... ...	2	2	0
G. A. Pringle	2	2	0
Seton Pringle	5	5	0
Miss Purefoy	5	0	0
R. Dancer Purefoy ...	10	0	0
F. C. Purser	5	5	0
J. J. Purser	2	2	0
James Quirke	1	0	0
Sir Joseph Redmond ...	5	5	0
J. M. Redington	1	1	0
Hugh J. Ritchie	1	1	0
Lt.-Col. E. A. Roe... ...	1	1	0
Charles H. G. Ross ...	2	2	0
J. Ralph Ross...	1	0	0
W. S. Ross	0	10	0
T. J. Rossiter	1	1	0
R. J. Rowlette	2	2	0
R. A. Rutherford	1	1	0
Henry M. Scott	1	0	0
J. Alfred Scott	2	2	0
George Scriven	3	3	0
Reginald W. Scully ...	5	5	0
Edward Sheridan	2	2	0
Thomas Sinclair	5	5	0
Alfred Smith	5	5	0
T. N. Smith	2	2	0
Joseph Smyth...	1	1	0
Bethel Solomons	5	5	0
Alex. B. Stephenson ...	1	1	0
Edward Stephenson ...	1	0	0
Mary S. P. Strangman...	1	1	0
Henry Stokes	2	2	0
H. Stoney...	1	0	0
Johnson Symington ...	1	1	0
Robert J. Taaffe	1	1	0
John W. Tate	1	1	0
Thomas J. Talbot	1	1	0
James Taylor	1	1	0
Sir William J. Thompson	3	3	0
H. Sneyd Torney	3	3	0
David Turner and a Friend	3	2	0
Joseph Wallace	1	1	0
Wm. Patrick Walsh ...	1	1	0
Hugh T. Warnock... ...	1	1	0
Joseph J. Waters	1	1	0
Robert Waters...	1	1	0
W. E. Waters	1	1	0
Louis Werner	5	5	0
Joseph T. Wigham ...	2	2	0
George S. Wigoder ...	1	1	0
T, Henry Wilson	5	5	0
Francis A. Winder... ...	1	0	0
W. A. Winter	3	3	0
Sir Stewart Woodhouse	10	10	0
John F. Woodroffe... ...	1	1	0
Sir Robert Woods	10	10	0
Albert E. Wynne	2	2	0

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge with thanks the receipt of surgical instruments, &c., kindly contributed by the following donors since the publication of the last list:—

Dr. A. E. Whitehead, Bridlington (two contributions); Anonymous, Birvie, Montrose; Dr. M. H. Taylor, Johnstone; Dr. Norman Davidson, Peterhead; Dr. W. H. Webster, Castle Cliff, Ventnor; Dr. F. J. Allan, Public Health Department, Westminster; Dr. Harris, Southport; Dr. Isdale Greig, Kirkcaldy; Dr. F. Johnston, Birkenhead; Dr. George Hill, Birkenhead; Dr. J. H. Fardon, Birkenhead; Dr. W. A. Pierce, Birkenhead; Dr. H. L. Pearson, Birkenhead; Dr. H. N. Harrington, Birkenhead; Dr. L. D. Temple, Birkenhead; Mr. F. C. Cooling, Birkenhead; Mr. A. H. Ellithorne, Birkenhead; Mr. S. Robinson, Birkenhead; Miss Robinson, Birkenhead; Dr. R. Broughton Knowles, Primrose Club, St. James's, S.W.; Mr. William Baker, Hon. Director, Dr. Barnardo's Homes; Dr. E. W. S. Evans, Mark-lane, E.C.; Dr. Bramley Taylor, Weybridge; Dr. Willson, Weybridge; Mr. G. Carnock Sawday, Weybridge; Mrs. R. Musgrave Craven, Grove Park, Wanstead; Dr. John T. Leon, Southsea; Dr. H. W. Saunders, Eastbourne; Dr. W. J. Harnet (second contribution), Barnet; Dr. J. Robertson Crease, South Shields.

WOLVERHAMPTON AND STAFFORDSHIRE HOSPITAL.—The governors of this institution having been unable, owing to the heavy demand for medical men for military purposes, to obtain men for the posts of three resident medical officers who have been called up for service, have appointed three medical women to fill the vacancies.

SIR JOHN STRUTHERS LECTURESHIP.—Dr. Johnson Symington, F.R.S., Professor of Anatomy, Queen's University, Belfast, delivered the second of the Struthers Lectures in the hall of the Royal College of Surgeons of Edinburgh on Dec. 16th, the subject being "Observations on the Relations of the Inner Surface of the Cranial Wall to the Outer Surface of the Brain." The lecture was illustrated by specimens, casts, and photographs.

KING EDWARD'S HOSPITAL FUND.—On Dec. 16th a meeting of this fund was held at St. James's Palace for the purpose of awarding grants. In the absence of the Duke of Teck the Speaker of the House of Commons presided, and read a letter from Lord Stamfordham expressing the King's hope that the needs of voluntary hospitals would not be lost sight of during the present crisis, and recording His Majesty's grateful appreciation of the service of those who had worked on behalf of the fund. The sum distributed amounted to £140,000.

THE WAR.

THE CASUALTY LIST.

THE following casualties among officers of the Royal Army Medical Corps have been reported since our last issue:—

Wounded: Captain G. H. Stack and Captain A. C. Osburn.

Prisoners of war: Major A. G. Thompson, Lieutenant J. R. Hayman, and Lieutenant W. A. Russell.

We trust that the unofficial report, through private sources, that Captain Angus McNab, medical officer of the 1st Battalion, London Scottish Regiment, is not dead but a prisoner of war may prove to be correct. He was officially reported killed in action.

VOLUNTARY HOSPITALS IN FRANCE.

The British Red Cross Society announces, on the authority of the War Office, that no further voluntary hospitals whatever are required at present for the British Expeditionary Force in France, and that any voluntary hospitals at present on the continent, or which may at some future time proceed to the continent, will work as base hospitals only, and will not be allowed to proceed further.

THE WAR AND THE NATION'S DRUG-SUPPLY.

The December evening meeting of the Pharmaceutical Society was devoted to the reading of five papers on the effect of the war on the nation's drug-supply, and the subject was dealt with from every standpoint. It is, of course, common knowledge that immediately after the outbreak of war there were substantial advances in the prices of a large number of medicinal products, but it is, perhaps, not so well known that had it not been for certain actions taken by the Government in consultation with an advisory committee consisting of manufacturing chemists and pharmacists prices would most probably have risen to a much higher level. As one of the contributors to the discussion, Mr. J. C. Umney, pointed out, the action of the Government by their inquiries and legislative power for acquisition had the effect of levelling prices from the range of fancy to fact within the short space of two or three weeks. The prohibition of the export of certain drugs was also an important factor in preventing the depletion of stocks. With regard to synthetic products and certain other chemical substances made in Germany Mr. C. A. Hill observed that the reason why stocks of these had not run out completely was that the high prices had checked the consumption, and in consequence the reduced demand had prevented an absolute famine. "After four months," he added, "we do not find ourselves without many necessaries." Mr. Hill discussed the prospects of the establishment in this country of the manufacture of synthetic drugs. "We have," he said, "the chemical knowledge in this country, and at a price it could be done. It may not be done all at once, but it can be done in time ...... but it means trial and error, special plant, time and money; and this raises the difficulty, of which we have naturally heard so much of late—security for the future for a sufficient period to admit an adequate return on capital outlay." Professor H. G. Greenish discussed the question from the standpoint of vegetable drugs and advocated increased attention to the cultivation of medicinal plants in suitable parts of the British Empire. He also suggested the desirability of finding substitutes for drugs, the supply of which has been seriously curtailed. "The word substitute," he admitted, "has a somewhat objectionable sound, but if we look at the Indian and Colonial Addendum to the Pharmacopœia we shall find a number of drugs and preparations which in certain limited areas may be used in the place of others—that is, substituted for them. Thus, butea gum may replace kino, black catechu may replace catechu, and so on. Such drugs have been called 'parallel drugs'—their number is by no means small." Mr. F. W. Gamble contributed to the discussion an interesting statement with regard to the effect of the war on the supply and demand for serums and vaccines. Immediately on the outbreak of war a large demand arose for calf lymph and typhoid vaccines. There was also a demand for antisepsis vaccine and tetanus antitoxin. The amount of tetanus antitoxin occurring normally in this country is quite small, and the supply of serum ready prepared was therefore soon exhausted, but fortunately large stocks of the antitoxin were available from America, and the additional requirements are being supplied with American serum until British production is increased. Mr. R. R. Bennett dealt with the supply of drugs and chemicals the manufacture of which is protected by patents owned by Germans, and substances commonly known by a name in which there exist trade-mark rights owned by an alien enemy.

THE BRITISH RED CROSS SOCIETY.—The summary of the work for the week ending Dec. 12th states that the number of auxiliary Home Red Cross Hospitals accepted by the War Office to date is 598, containing beds for 16,950, including 678 beds, accepted during the past week, and distributed among the Army Commands, as follows:—London, 933; Southern, 5445; Aldershot, 796; Eastern, 4324; Northern, 2610; Western, 2641; Irish, 201. A number of Red Cross Voluntary Aid Detachments are being utilised in connexion with these hospitals.

The British Red Cross Hospital at Netley is now in working order, and the Maxine Elliott operating theatre has been taken into use. The plans for the new extension of 200 beds given by Lord Iveagh have been prepared, and contracts are being entered into. This addition to the hospital should be in full working order by the end of January. The medical personnel is as follows:—Commandant: Surgeon Lieutenant-Colonel Sir Warren R. Crooke-Lawless. Registrar and Secretary: Captain J. L. Dickie, M.B. Senior Physician: Major C. H. Miller. Senior Surgeon: Major C. Wallace. Staff Surgeons, Physicians, and Specialists: Captain C. Christopherson, Captain J. A. Hayward, Captain D. C. Nitch, Captain H. L. Tidy, Captain A. C. Hudson, Lieutenant W. Anderson, Lieutenant M. S. Esler, Lieutenant J. C. Ferguson, Lieutenant C. Gibson, Lieutenant J. D. Lyle, Lieutenant J. F. Mackay, Lieutenant E. C. Norbury, Lieutenant C. Pearson, Mr. D. B. Pascall, and Mr. W. G. Marsden.

There have been despatched during the week 12 motor ambulances and one lorry to Dunkirk; six ambulances, four touring cars, one lorry, and a motor cycle to Boulogne, and two ambulances to Havre. The motor ambulances which have been despatched to date number 700.

The British Hospital at Wimereux, Boulogne, which was equipped and opened in the Hôtel Bellevue on Nov. 12th, has been inspected by Colonel Barefoot and declared to be "a most excellent little unit." It has its own private fleet of six motor ambulances, motor lorry, and two cars. The military medical officer in command is Lieutenant-Colonel Copeland, R.A.M.C.; chief surgeon, Major H. M. W. Gray, F.R.C.S., R A.M.C. (T.); the assistant surgeons, Dr. A. H. Rabagliati, M.D., F.R.C.S., and Mr. William Pearson, F.R.C.S.; the physician, Lieutenant-Colonel A. H. Lister, M.D., R.A.M.C.(T.); and the radiographer, Mr. P. Lake-Hope, M.R.C.S. The hospital has 102 beds (12 of which are for officers), and during the first month there were admitted—officers, 25; other ranks, 456; prisoners of war, 3; total, 484.

453 cases of stores and garments were despatched abroad during the week; of these, the greater portion were sent to Boulogne, Calais, and Dunkirk. 215 hospitals in this country were supplied with 479 cases of stores. In consequence of the recent lull in the fighting, the extreme pressure that existed previous to the middle of November has been considerably relaxed. Moreover, the military stores in France are at present very fully stocked, and can now supply all the army hospitals abroad with such stores as are included in the War Office Schedules. This statement is made upon the authority of the Director-General of the Army Medical Service. Under these circumstances the British Red Cross Society is only called upon to supply its own hospitals, and to supplement the military hospitals by furnishing such stores as are not included in the schedules above mentioned. It is practically certain that emergencies—similar to that which occurred in the last week of October and the first fortnight of November—will again arise. It is equally certain that, under such conditions, the Royal Army Medical Corps will gladly welcome all stores that the Red Cross Society can send into France.

The following procedure has consequently been laid down, and has been approved by the Director-General of the Army Medical Service:—1. As long as the present conditions last, and as long as no sudden and unexpected demand arises, the Stores Department of the Red Cross will continue to supply the following: (*a*) the hospitals abroad, actually under its own authority, and for which it is directly responsible; (*b*) the ambulance trains, with comforts and garments; (*c*) the rest stations, at or near Boulogne; (*d*) the ambulance ships, with garments for the wounded; (*e*) the military hospitals abroad, with such comforts and garments as are not included in the Army Schedule and which it may wish to provide. 2. Should the present conditions change and an emergency arise, involving a large and sudden increase in the sick and wounded arriving at Boulogne or any other base, the Stores Department will assist the Royal Army Medical Corps to the utmost of its power by sending over stores of all descriptions to France in large quantities and in the quickest possible time.

The consulting staff of the King George Red Cross Hospital of 1650 beds, which is being established in the buildings of the new Stationery Office, near Waterloo Station, has been announced as follows:—

Consulting Physicians: Sir Thomas Barlow, Bart., Dr. J. Mitchell Bruce, Sir Bertrand Dawson, Sir H. Bryan Donkin, Sir Dyce Duckworth, Bart., Sir James Goodhart, Bart., and Sir Seymour Sharkey.

Consulting Surgeons: Sir W. Watson Cheyne, Bart., Sir Rickman J. Godlee, Bart., Mr. J. Warrington Haward, Sir Henry Morris, Bart., and Mr. Edmund Owen.

THE FRENCH RED CROSS.—The London Committee of the Croix Rouge Française has now been reconstituted and has its headquarters at 25, Knightsbridge, Hyde Park Corner, S.W. The president is the Viscontesse de la Panouse, and the honorary committee includes the French Ambassador, the Duchesses of Norfolk, Somerset, Devonshire, Marlborough, Roxburghe, and Wellington, and a number of other distinguished ladies. The executive committee includes the president, Madame Brasier de Thuy (vice-president), Comtesse de Saint-Seine (treasurer-general), Mme. Phalempin (secretary-general), Mrs. N. Lake (honorary treasurer), Mr. P. A. Wilkins (honorary secretary), and Dr. James Donelan (medical referee). A number of surgeons have already been sent out to France, and reports received from them indicate that very satisfactory work is being accomplished. Two well-known Dublin surgeons, Mr. R. Atkinson Stoney and Mr. H. S. Meade, have lately left to serve with the French Red Cross.

The first motor ambulance convoy organised for the Croix Rouge Française by the British Ambulance Committee for service at the front is to be despatched immediately. It will consist of 25 ambulances, driven by the owners or their chauffeurs, or by mechanics appointed by the Committee. It is to be under the control of a representative of the British

Ambulance Committee in all matters relating to the management or scope of work. Thanks to the promptitude with which M. Millerand, the French War Minister, responded to the overtures made to him by the British Ambulance Committee, and the manner in which Mr. B. Peyman, the secretary of the Committee, was received at Bordeaux, the despatch of the convoy has been greatly expedited. The Committee are in urgent want of a repair lorry to accompany the convoys despatched, the cost of each such auxiliary being approximately £550, while the need of more funds for general purposes is pressing.

EUROPEAN AMBULANCE WAR FUND.—The Ambulance Department of the Order of St. John of Jerusalem has issued an appeal for renewed support because of the growing demands upon its resources. From all parts of Great Britain, from France and Belgium and Serbia, from Indian camps and hospital ships, from ambulance trains and motor convoys, come the most urgent appeals for clothing, bedding, surgical dressings, hospital comforts, and for warm garments for convalescents. Everything that is warm and useful and clean is wanted, everything that a wounded man or a sick man needs, from the time that his war-worn uniform is taken from him in hospital. The address for all contributions is the President, St. John Warehouse, 56, St. John-square, Clerkenwell, E.C.

THE Council of the Royal College of Surgeons of England has appointed Sir W. Watson Cheyne, president, to serve on the Professional Classes War Relief Council, which, as already explained in these columns, has been formed to deal with distress among the professional classes directly due to the war.

THE MILITARY EXHIBIT AT THE HISTORICAL MEDICAL MUSEUM.—At the Wellcome Historical Medical Museum in Wigmore-street Mr. Henry S. Wellcome has conceived the timely idea of collecting together a special exhibit of interesting objects and relics associated with naval and military medicine and surgery, nursing, and ambulance. In addition to items previously in the museum, such as Lord Nelson's medical cabinet and the medicine chest of the Duke of Wellington, the selection includes a number of things lent by the museum of the Royal Army Medical College, certain London hospitals, and some private owners. Among these are relics of Dr. Gillespie, R.N., who was surgeon-general to Nelson's fleet; a letter from George Washington, dated Philadelphia, Feb. 20th, 1785, enclosing $60 in payment for a denture, a fragment of which appears in the case; a case of dental instruments that belonged to Napoleon I., and a French army surgeon's field pouch of 1862, which contains also a number of pistol cartridges. In the same show-case is a sample of the first field dressing issued to the British army for use in the Crimean War, and close to it is one supplied by Burroughs, Wellcome, and Co. for use in the Ashantee War. An especially interesting exhibit is the first electric bullet detector, devised by Sir Thomas Longmore, which consists of zinc and copper plates with a field compass in circuit and attached to probes. Close by is Dr. Wilde's electric alarum bullet indicator, a much more elaborate affair, in a mahogany case with bell, battery, and forceps. Another case illustrates the development of the tourniquet, beginning with Paré's original "leather thong," near it are Morel's (1678), which consists simply of a band and cord with a twisting peg, that of Dionis (1780), in which two twisting sticks are used, and various improvements thereon made in the eighteenth century by the German Richter, the Italian Assalini, and the Frenchman Savigny. Petit's tourniquet dates from 1712, and of this various specimens are shown, including that of Freke (1734), of St. Bartholomew's Hospital, who attached a spring cog to prevent loosening. Among the tourniquets must be mentioned the actual one used in the amputation of Nelson's arm at Teneriffe in 1797. Various artery compressors, a bandage winder of the eighteenth century, and a nurse's bandage carrier resembling a lady's chatelaine in bone, are in this case. A Forfex excisoria of the sixteenth century for extracting arrowheads and various forms of bullet extractors dating from 1535 onwards are of interest. A copy of William Clowes' "Book of Observations" (1637) depicting the instruments used in treating wounds is shown. Surgical instruments gathered on the battlefields of Vittoria (1813) and Waterloo, and an early eighteenth century case that belonged to the French garrison at Strassburg, are also to be seen. Downstairs a case contains a number of models of stretchers extemporised by the Japanese from various available materials, which display remarkable ingenuity. Another case shows the evolution of the splint, beginning with those of various native tribes. The Malayan splints are of particularly fine character. There is a fine exhibit of relics of Florence Nightingale, including several autograph letters from her, two dating from Scutari in 1855; also a collection of portraits, engravings, and so on, illustrative of her career, among which must be especially noted the original oil painting by Barraud, depicting her writing a letter for a wounded soldier, the engraving of which is widely known. There is also a fine panel portrait of William Clowes (1540–1604), "Naval and Military Surgeon to St. Bartholomew's Hospital," and Physician-in-Ordinary to Queen Elizabeth. One of the most interesting and topical exhibits, however, is a couple of postcards from a sergeant of the R.A.M.C. in France, with clever caricature pictures drawn in pencil on the special French Government post-card, and coloured with tincture of iodine and permanganate of potash by means of a brush made out of a match and absorbent cotton. They show considerable artistic talent. We have no doubt that this special section of the museum will excite no little interest.

ABERDEEN UNIVERSITY AND THE WAR.—At a meeting of the University Court of the University of Aberdeen held on Dec. 8th Principal George Adam Smith said that a provisional list up to Nov. 30th last showed that there were on naval and military service 330 graduates or alumni of the University, 266 students, and 79 students with the Officers Training Corps, making a total of 675. The Principal said this number would, no doubt, be largely added to before a final roll of members of the University on active service was completed. At the same meeting the gift was announced of £4000 from Mr. George Skelton Yuill, to encourage the practical application of the theory and science of chemistry to the arts, manufactures, and industries of Great Britain.

Sir Courtauld Thomson has been appointed Commissioner to the Order of St. John of Jerusalem and the British Red Cross Society, with the rank of lieutenant-colonel with the British army in the field, and will act under Surgeon-General Sir Arthur Sloggett, joint Director-General of the Army Medical Service and Chief Commissioner to the associated organisations.

Surgeon-General William D. C. Williams, C.B., Director-General of the Army Medical Service, Australian Imperial Forces, has reached London on business relating to the medical services of the Australian military contingent.

VACANCIES FOR MEDICAL OFFICERS.—We are asked to state that there are one or two vacancies for officers, who must be qualified medical men, in the 2nd South Midland Mounted Brigade Field Ambulance, R.A.M.C. (T). Reserve. Full particulars can be obtained of the Officer Commanding, Headquarters, Great Missenden, Bucks.

WE announce with much regret the death of Mr. Bernard Pitts, consulting surgeon to St. Thomas's Hospital and to the Hospital for Sick Children, Great Ormond-street.

DONATIONS AND BEQUESTS.—A sum of £500 has been bequeathed to the Aberdeen Royal Infirmary by the late Mr. James Ross, of Easter Beltie, advocate in Aberdeen.

SCARLET FEVER IN BELFAST.—At a meeting of the Public Health Committee of the city of Belfast, on Dec. 10th, after the receipt of reports from the medical officer of health and from the visiting physician to the Municipal Fever Hospital in regard to the serious epidemic of scarlet fever which has for years been prevalent in Belfast, it was decided to close the public or national schools for a period of five weeks—that is, from Dec. 14th until Jan. 18th of next year. The Public Health Committee hope that this interregnum will give an opportunity for any existing infection to exhaust itself, and will also afford a time during which the schools can be disinfected.

Medical News.

University of Oxford.—At a Congregation held on Dec. 12th the following medical degrees were conferred :—

B.M.—F. W. Browne, Wadham ; W. Brown, Christ Church ; H. G. Morris, University ; G. A. Maling and G. S. Robinson, Exeter ; B. E. Wall, Lincoln ; V. T. Ellwood, Pembroke ; C. H. Carlton, St. John's ; L. R. Broster, Trinity ; F. C. Gladstone, Pembroke ; and H. M. Pope, Lincoln.

University of Cambridge.—At a Congregation held on Dec. 11th the following medical degrees were conferred :—

M.B.—H. Hartridge, King's ; and C. R. A. Thacker, Downing.

Royal College of Surgeons of England.—As the result of the Final Fellowship Examination held on Nov. 19th, 23rd, 24th, and 25th last, for which 34 candidates presented themselves, of whom 11 acquitted themselves satisfactorily (including two candidates who have not yet complied with the regulations), the Council at its meeting on Dec. 10th conferred diplomas of Fellow upon the following nine candidates:—

Robert Neville Geach, M.R.C.S., L.R.C.P., St. Bartholomew's and Middlesex Hospitals ; Douglas Walker Hume, M.B., B.S. Lond., M.R.C.S., L.R.C.P., and Charles Noon, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital ; Gerald Waddington Beresford, M.R.C.S., L.R.C.P., London Hospital ; John Hamilton Barclay, M.B., B.S. Durh., M.R.C.S., L.R.C.P., Durham University and London Hospital ; Bernard Whitchurch Howell, M.B., B.S. Lond., M.R.C.S., L.R.C.P., St. Bartholomew's Hospital ; Philip Geoffry Doyne, B.A. Oxon., M.R.C.S., L.R.C.P., Oxford University and St. Thomas's Hospital ; Ralph Marsh de Mowbray, M.R.C.S., L R.C.P., St. Thomas's Hospital ; and Douglas Green, M.B., B.S. Lond., Sheffield University and St. Bartholomew's Hospital.

Diplomas of Member were conferred upon the following three ladies and one gentleman who have passed the requisite examinations and have now complied with the by-laws of the College :—

Mabel Kate Bishopp and Hilda Grace Johnson, Royal Free Hospital ; James Hales Parry, Cambridge University and Guy's Hospital ; and Mary Woods, Royal Free Hospital.

Licences to practise Dentistry were conferred upon the following 35 candidates who have passed the requisite examinations and complied with the by-laws :—

Sidney Roland Bacon, Middlesex and Royal Dental Hospitals ; James Millard Barnes, Guy's Hospital ; Albert Edward Barnett and Roland Harry Bebb, L.D.S. Glasg., Birmingham University ; Montague Kempston Butler, Middlesex and Royal Dental Hospitals ; Henry Claude Carter, Middlesex and National Dental Hospitals ; Herbert Cartman, Manchester University ; Louis Edmund Claremont, Middlesex and Royal Dental Hospitals ; Walter Ernest Coe, Guy's Hospital ; Walter Tyrrell Cooper, Charing Cross and Royal Dental Hospitals ; Cyril James Crocker, Guy's Hospital ; Dennis Reginald Curnock, Charing Cross and Royal Dental Hospitals ; Arthur Cyril Dean, Guy's Hospital ; Eric Sutton Dickin, Liverpool University and National Dental Hospital ; William Edwin Dodd, Harold Mayston Fisher, and Charlie Lewis Hicks, Middlesex and Royal Dental Hospitals ; Walter Owen Hughes, Liverpool University ; Philip Everard Jessop and William George Lloyd, Guy's Hospital ; Arthur Helmuth John Miller, Charing Cross and Royal Dental Hospitals ; Thomas Dickson Muirhead, Lancelot Eric Charles Peckover, and Arthur George Drake Pridham, Middlesex and Royal Dental Hospitals ; Sydney Victor Shrimpton, Bristol University and Royal Dental Hospital ; Frederick Elliott Smith, Middlesex and National Dental Hospitals ; Donald Thorne, Charing Cross and Royal Dental Hospitals ; Vernon John Thurston and Clement John Lethbridge Wells, Middlesex and Royal Dental Hospitals ; Frank Edward Welton, Guy's Hospital ; Clarence Leslie Brunel White, Middlesex and Royal Dental Hospitals ; William Thomas Williams, Liverpool University ; Edgar Joseph Winstanley, Middlesex and Royal Dental Hospitals ; Samuel Anthony Withers, Guy's Hospital ; and Francis Bernard Yonge, Middlesex and Royal Dental Hospitals.

Dublin University : School of Physic, Trinity College.—At examinations held recently the following candidates were successful :—

Preliminary Scientific Medical Examination.

Botany and Zoology.—Mary Christina Sheppard, William Arthur Clarence Dowse, John Howard Blackwood Murphy, Henry Maxwell, Johannes Tobias Mynhardt, George Malone, and Jessie Gilbert.

Chemistry and Physics.—Eric James Lyndon, Mary Christina Sheppard, Alfred John Beckett, William Bruce Briggs, William Leech Young, Percival Atkin Dormer, Eric Stuart Ewing Mack, William Sweetman, Herbert William McAuliffe, Kenneth McGregor Greer, Frederick William Godbey and Henry Maxwell (equal), Jason Grant Bird, Lionel Wigoder, and James John Griffin, William Alfred Shannon, and Crawford Low Wilson (equal).

Intermediate Medical Examination, Part I.

Anatomy and Institutes of Medicine.—Joseph Roland Brennan, Patrick Rocks, Joseph Godfrey Bird, Henry James Rice, Paul Herbert Shelley Smith, David Shields Prentice, Marie Annette Hadden, William Frederick Wicht, Hirsh Brill, Thomas Hugh Robinson McKiernan, Philip Augustus Hall, Rita Henry, Millicent Hamilton-Johnstone, and Robert William Pritchard.

Intermediate Medical Examination, Part II.

Anatomy and Physiology.—Thomas Paul Chapman, Charles Lewers McDonogh, James Benjamin Taylor, Louis Blumberg, and Edward Lipman.

Final Medical Examination, Part I.

Materia Medica, Medical Jurisprudence and Hygiene, and Pathology.—Esther Violet Adderly, Charles Henry Comerford, Joseph Henry Cranston Walker, Frank Healy, Cecil Francis Brady, Mortimer McGee Russell, George William Doran, Thomas Edward Bellingham Beatty (medical jurisprudence and hygiene, pathology), William Hunt (medical jurisprudence and hygiene, pathology), John Armstrong Crozier Kidd (medical jurisprudence and hygiene, pathology), Thomas William Sweetman (materia medica, pathology), Leyburne Murphy (medical jurisprudence and hygiene, materia medica), and James Edward Jameson (pathology, completing examination).

Final Medical Examination, Part II.

Surgery.—Frederick Harris, George Brownrigg Hadden, Edward Percival H. Vickery, Geoffrey Arthur Hoffman, Eric Alfred Lumley, Edward Llewellyn Foot Nash, David Stanley Martin, Edward Gordon Fish, Hilda Maud Marsh, and Edmond Robinson.

Medicine.—Eric Alfred Lumley, Frederick Harris, Walter Joseph Ronan, Edward Percival Hadden Vickery, Bertrand Cecil Owens Sheridan, Francis Albert L'Estrange, Amos George Varian, Robert Alexander Anderson, George Brownrigg Hadden, Kathleen Dorathea Wallace, Joseph Patrick Quinn, Robert William Chapman, Frederick Robert Dougan, David Stanley Martin, and Thomas James Logan Thompson.

Midwifery.—Isaac Whitla Corkey (high marks), Edmund Duncan Tranchell Hayes, Eric William Craig, Richard Wellington Shegog, Violet Mabel Deale, Eugene John McSwiney, Herrbert Mitchell, Douglas Chetham Pim, Geraldine Murphy, Hilda Maud Marsh, George Stanton, Herbert Daniel, Christopher Charles Albertyn, Edward Mannix, Andrew William Palethorp Todd, Sydney Walter Fisher, Francis Joseph Ord King, Maurice Baylis King, David Henry Hall, Cecil McLaren West, Joseph Henry Cranston Walker, Alfred William Darnley Magee, Arthur Cyril Bateman, George Joughin, Audrew John Horne, and David Stanley Martin.

Final Dental Examination (B. Dent. Sc.).

Herbert Wright.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Cormac, H. Dove, M.B., M.S. Madras, has been appointed Medical Superintendent of the Cheshire County Asylum, Parkside Macclesfield.

Davies-Colley, Eleanor, M.D., B.S. Lond., F.R.C.S. Eng., has been appointed Surgical Registrar to the Royal Free Hospital.

Gunning, R. C., Lieutenant-Colonel, R.A.M.C. (retired), has been appointed by the War Office Commandant of the American Women's War Relief Fund Hospital at Paignton (Devon).

Johnston, T. B., M.B., Ch.B. Edin., has been appointed Lecturer and Demonstrator in Anatomy at University College, London.

Kelly, John B., L.R.C.P. & S. Irel., has been appointed Temporary Medical Officer for the Bleadon District by the Axbridge (Somerset) Board of Guardians.

Lowry, Eleanor, M.B., B.S. Lond., has been appointed Clinical Assistant to the Throat, Nose, and Ear Department of the Royal Free Hospital.

Martin, Douglas, M.B., Ch.B. Edin., has been appointed School Medical Officer and Assistant Medical Officer of Health to the Borough of South Shields.

O'Donovan, W. J., M.D. Lond., M.R.C.P. Lond., has been appointed Acting Assistant Physician to the Royal Free Hospital.

Pickard, Ellen M., M.D., B.S. Lond., has been appointed Medical Registrar to the Royal Free Hospital.

Price, Frederick W., M.D. Edin., M.R.C.P. Lond., has been appointed Honorary Assistant Physician to the National Hospital for Diseases of the Heart.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Ashton-under-Lyne Union Workhouse.—Resident Assistant Medical Officer. Salary £150 per annum, with rations, laundry, and residence.

Barnsley, Beckett Hospital and Dispensary.—Second House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and laundry.

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

Bedford County Hospital.—Assistant House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry.

Bethnal Green Infirmary, Cambridge-road, N.E.—Assistant Medical Officer. Salary at rate of £200 per annum, with apartments, board, and washing.

Birkenhead Borough Hospital.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birmingham City Mental Hospital, Rubery-hill.—Female Junior Assistant Medical Officer. Salary £200 per annum, with apartments, board, laundry, &c.

Birmingham, Little Bromwich Fever Hospital.—Assistant Resident Medical Officer. Salary £200 per annum, with board and residence.

Birmingham Union.—Dudley-road Infirmary: Second Assistant Medical Officer. Salary at rate of £210 per annum. Third Assistant Medical Officer. Salary at rate of £170 per annum. Fourth Assistant Medical Officer. Salary at rate of £160 per annum. Selly Oak Infirmary: Assistant Medical Officer. Salary at rate of £180 per annum. All with apartments, rations, laundry, and attendance.

Birmingham, Yardley-road Sanatorium and Anti-Tuberculosis Centre.—Third Assistant Medical Officer. Salary £200 per annum, with board and residence.

Bradford Royal Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

Bradford, St. Luke's Hospital and Union House.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with rations, apartments, and washing.

Bridgwater Hospital.—House Surgeon, unmarried. Salary at rate of £125 per annum, with board, lodging, and washing.

Bristol, City and County of.—Temporary Assistant Medical Officer. Salary at rate of £350 per annum.

Bristol Eye Hospital.—House Surgeon. Salary £100 per annum with board, residence, and laundry.

Burley-in-Wharfedale, Scalebor Park Asylum.—Assistant Medical Officer. Salary £250 per annum, with rooms, board, attendance, and washing. Or Locum Tenens for winter months. Salary £5 5s. per week.

Bury County Borough.—Temporary Assistant to Medical Officer of Health. Salary at rate of £350 per annum.

Canterbury, Kent and Canterbury Hospital.—Senior House Surgeon and Junior House Surgeon, unmarried. Salaries £100 and £90 per annum respectively, with board, lodging, and washing.

Canterbury, Kent County Asylum, Chartham.—Third Junior Assistant Medical Officer. Salary £250 per annum, with quarters, board, washing, &c.

Cardiff, King Edward VII.'s Hospital.—Two House Surgeons for six months. Salary at rate of £140 per annum each, with board, residence, and laundry.

Cardiff, King Edward VII. Welsh National Memorial Association.—Assistant Resident Medical Officers at Sanatoria. Salary £250 per annum and maintenance.

Carlisle, Cumberland and Westmorland Asylum, Garlands.—Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, lodging, and washing.

Chester, City and County of the City of.—Assistant Medical Officer of Health. Salary £300 per annum.

Chichester, West Sussex County Mental Hospital.—Second Assistant Medical Officer. Salary £250 per annum, with apartments, board, laundry, and attendance.

City of London Union Institution and Infirmary, 42, Clifton-road, Lower Clapton, N.E.—Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, rations, and washing.

City of Westminster Union Infirmary, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

Clifton, York, North Riding Asylum.—Locum Tenens Medical Officer. Salary £250 per annum, with apartments, board, &c.

Croydon General Hospital.—Senior House Surgeon. Salary £105 per annum, with residence, board, and laundry.

Dorset County Council.—Assistant County Medical Officer of Health. Salary at rate of £250 per annum.

Douglas, Isle of Man, Noble's Hospital.—Resident House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

Dudley, Guest Hospital.—Assistant House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

Durham County Council.—Assistant School Medical Officer. Salary £300 per annum.

East Wilts United Districts.—Medical Officer of Health and Assistant School Medical Officer. Salary £450 per annum.

Evelina Hospital for Sick Children, Southwark, S.E.—Ten Qualified Clinical Assistants in Out-patient Departments.

Falkland Islands.—Assistant Colonial Surgeon. Salary £400 per annum.

General Post Office.—Headquarters Medical Department (Female Staff).—Female Assistant on Headquarters Medical Staff. Salary £180 per annum.

Gloucester, Gloucestershire Royal Infirmary and Eye Institution.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £200 per annum, with board, lodging, and washing.

Guildford, Royal Surrey County Hospital.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

Hospital for Epilepsy and Paralysis and other Diseases of the Nervous System, Maida Vale, W.—Resident Medical Officer for six months. Salary at rate of £75 per annum, with board, lodging, and washing.

Huddersfield, Storthes Hall Asylum, Kirkburton.—Assistant Medical Officer or Locum Tenens. Salary £250 per annum, with rooms, board, attendance, and washing. Salary for Locum Tenens £5 5s. per week, with rooms, board, attendance, and washing.

Jharia Mining Settlement, Bihar, India.—Chief Sanitary Officer. Salary Rs.1200 (£80), rising to Rs.1500 (£100) a month, with house.

Kidderminster Medical Association, 4, Lion-street.—Resident Medical Officer. Salary £350 per annum, with residence, rates and taxes, midwifery fees &c.

Leeds Hospitals for Infectious Diseases and Tuberculosis.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £170 per annum, with board, lodging, and washing.

Leeds Public Dispensary.—Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

Leicester Royal Infirmary.—Ophthalmic House Surgeon and Assistant House Physician (joint post). Also Two Assistant House Surgeons. Salaries at rate of £100 per annum, with board, apartments, washing, and bonus. Also Two Assistant Resident Medical Officers for six months, with board and apartments.

Liverpool Stanley Hospital.—House Surgeon. Salary £80 per annum, with board, residence, and laundry.

Liverpool, West Derby Union, Alder Hey Hospital, West Derby.—Two Assistant Resident Medical Officers, unmarried. Salaries £250 per annum, with board, &c.

London Lock Hospital, Harrow-road, W.—House Surgeon at Female Hospital for six months. Salary at rate of £130 per annum, with rooms, board, and washing.

London Throat Hospital, 204, Great Portland-street, W.—House Surgeon. Salary £50 per annum.

Lowestoft and North Suffolk Hospital.—House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and laundry.

Maidstone, Kent County Asylum.—Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, quarters, attendance, washing, &c.

Manchester, Ancoats Hospital, Mill-street.—Resident Medical Officer. Salary £130 per annum, with board and apartments. Also Resident House Physician. Salary £80 per annum, with board and apartments.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester Education Committee.—Female Assistant School Medical Officer, unmarried. Salary £300 per annum.

Manchester Hospital for Consumption and Diseases of the Throat and Chest.—Assistant Medical Officer for the Crossley Sanatorium, Delamere Forest, Cheshire. Salary £100 per annum, with board, apartments, and laundry.

Manchester Royal Eye Hospital.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

Manchester, St. Mary's Hospitals for Women and Children.—Resident Surgical Officer. Salary £90 per annum, with board and residence. Also House Surgeon for three or six months. Salary at rate of £70 per annum, with board and residence.

Manchester, Victoria Memorial Jewish Hospital, Cheetham.—Female Resident Medical Officer for six months. Salary at rate of £80 per annum, with rooms, board, and laundry.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Senior House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

Morpeth Dispensary.—House Surgeon, unmarried. Salary £120 per annum, with rooms, coal, gas, and attendance.

Newcastle-upon-Tyne City Hospital for Infectious Diseases.—Resident Medical Assistant. Salary £250 per annum, with board, lodging, &c.

Newcastle-upon-Tyne Education Committee.—Assistant School Medical Officers (One Male and One Female). Salaries £300 per annum.

Newcastle-upon-Tyne Poor-law Institution.—Second Assistant Resident Medical Officer. Salary at rate of £175 per annum, with apartments, rations, and washing.

New Hospital for Women, Euston-road.—Female House Physician, House Surgeon, and Obstetric Assistant. Also Resident Medical Officer to House of Recovery, New Barnet. Salary £60 per annum.

Newport (Mon.), Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry. Also Honorary Medical Officer to Ear, Nose, and Throat Department.

Northamptonshire County Council.—Assistant School Medical Officer. Salary £25 per month.

North Riding of Yorkshire County Council Education Committee.—Temporary Assistant School Medical Officer. Salary at rate of £300 per annum.

Nottingham General Hospital.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

Nottingham, Ransom Sanatorium, Sherwood Forest, Mansfield.—Resident Medical Officer. Salary £200 per annum, with board, residence, and laundry.

Oxfordshire Education Committee.—Temporary School Dentist. Salary £250 per annum.

Preston Royal Infirmary.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

Royal Waterloo Hospital for Children and Women, S.E.—Resident Medical Officer. Salary at rate of £150 per annum, with board and washing.

St. George's Hospital, Hyde Park Corner, S.W.—Surgical Registrar. Salary £200 per annum.

St. Mary's Hospital for Women and Children, Plaistow, E.—Resident Medical Officer. Salary at rate of £90 per annum, with board, residence, and laundry.

St. Thomas's Hospital.—Ophthalmic Surgeon for Out-patients.

Salford Royal Hospital.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

Salford Union Infirmary.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

Salisbury Infirmary.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

Sheffield City Hospitals (Infectious Diseases and Tuberculosis).—Assistant Medical Officer. Salary £160 per annum, with board, lodging, and washing.

Sheffield Royal Hospital.—Assistant House Physician, unmarried Salary £80 per annum, with board, lodging, and washing

Sheffield Royal Infirmary.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

Special Hospital for Officers (Lord Knutsford's Appeal).—Resident Medical Officer. Salary at rate of 260 guineas per annum.

Stoke-on-Trent County Borough Tuberculosis Sanatorium.—Resident Assistant Medical Officer for Stanfield Sanatorium and Assistant at the Tuberculosis Dispensary. Salary at rate of £250 per annum.

Stoke-on-Trent, North Staffordshire Infirmary, Hartshill.—House Surgeon and House Physician, unmarried. Salary at rate of £120 per annum each, with board, residence, and washing.

Stoke-upon-Trent Union Institution and Hospital, London-road, Newcastle, Staffs.—Assistant Resident Medical Officer, unmarried. Salary £200 per annum, with rations, apartments, and washing.

Sunderland Royal Infirmary.—Senior Resident Medical Officer and Two Junior House Surgeons. Salaries £150 and £120 per annum respectively, with board, residence, and laundry.

Swansea General and Eye Hospital.—House Surgeon. Salary £125 per annum, with board, washing, and attendance.

Taunton, Somerset and Bath Asylum, Cotford.—Assistant Medical Officer. Salary £250 per annum, with apartments, board, washing, attendance, &c.

Taunton, Taunton and Somerset Hospital.—Senior House Surgeon. Salary £120 per annum, with board, lodging, and laundry.

Trinidad Lunatic Asylum.—Assistant Medical Superintendent. Salary £250 per annum, £80 ration allowance, bachelor's quarters.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £150 per annum, with rooms, board, and washing.

Tunbridge Wells General Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, &c.

University of London.—Examiners.

Wakefield, Clayton Hospital.—Senior House Surgeon. Salary £160 per annum, with board, lodging, and laundry.

Wakefield, West Riding Asylum.—Assistant Medical Officer. Salary £250 per annum, with apartments, board, washing, and attendance.

Walsall and District Hospital.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

Warrington Infirmary and Dispensary.—Senior House Surgeon. Salary at rate of £200 per annum, with board, apartments, and laundry.

West Bromwich and District Hospital.—House Surgeon and Assistant House Surgeon. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

West Ham County Borough.—Assistant School Medical Officer. Salary £300 per annum.

West Ham Union.—Infirmary, Whipps Cross-road, Leytonstone, N.E.: Second Assistant Resident Medical Officer. Salary £250 per annum, with usual residential allowances. Sick Home, 95, Forest-lane, Forest Gate, E.: Deputy Medical Officer. Salary £250 per annum, with usual residential allowances.

Wigan, Royal Albert Edward Infirmary and Dispensary.—Senior House Surgeon. Salary £170 per annum, with board, apartments, and washing. Also Female Junior House Surgeon. Salary £130 per annum, with board, apartments, and washing.

Wilts County Council General Education Committee.—Temporary Assistant School Medical Inspector. Salary at rate of £300 per annum, with travelling and maintenance allowances.

Worcester General Infirmary.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

Worksop Victoria Hospital and Dispensary.—Medical Officer and House Surgeon. Salary £150 per annum, with rooms, coal, light, and attendance.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Hamilton, in the county of Lanarkshire, and at Rathfriland, in County Down.

Births, Marriages, and Deaths.

BIRTHS.

Baldwin.—On Dec. 7th, at Manchester-square, W., the wife of Aslett Baldwin, F.R.C.S., of a son.

Evans.—On Dec. 7th, at Church-street, Kidderminster, the wife of O. C. Penrhys Evans, M.D., of a daughter.

Sambon.—On Dec. 10th, at Woodlawn, Shoot-up Hill, N.W., the wife of Louis Westenra Sambon, of a son.

MARRIAGES.

Colbatch Clark—Dudding.—On Dec. 10th, at St. Lawrence's Church, Canon Pyon, Herefordshire, Henry Colbatch Clark, M.R.C.S., L.R.C.P., of Wellington, Hereford, to Florence Mary, eldest daughter of the late Frederick Walter Dudding and Mrs. Dudding, of Bayham House, Ipswich.

Simpson—Bedell-Sivright.—On Dec. 12th, at St. Paul's Church, Sheerness, Alexander Simpson, Surgeon, Royal Navy, to Catherine, second daughter of W. H. R. Bedell-Sivright, of Southouse, Mid-Lothian.

DEATHS.

Harris.—On Dec. 11th, at Shanklin, Deputy Surgeon-General William Henry Harris, late I.M.S. of Madras, in his 85th year.

Moreton.—On Dec. 5th, at Earlscroft, Tarvin, Cheshire, James Earl Moreton, F.R.C.S., aged 83 years.

Pitts.—On Dec. 13th, after a long illness, Bernard Pitts, M.A., M.C. Cantab., F.R.C.S. Eng., Consulting Surgeon to St. Thomas's Hospital and to the Hospital for Children, Great Ormond-street, aged 66 years.

Turner.—On Dec. 9th, at "Holmwood," Bournemouth, Henry Gunton Turner, M.R.C.S., aged 68 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH AND SANITATION IN JAMAICA.

Sir William Henry Manning, K.C.M.G., C.B., Governor of Jamaica, in his report on the colony for the year 1913–14, just presented to Parliament, devotes considerable space to matters concerning health and sanitation. He estimates the present population of the colony at 864,864, but there is always a good deal of migration going on; and the statistics of marriages, births, and deaths are calculated on the mean island population for the year, which in 1913 was 863,427. The marriage-rate per 1000 was 3·1, the birth-rate 35·3, and the death-rate 21·7. Of the births 64·5 per 100 were illegitimate, as compared with 63·3 per cent. for the decade. The general death-rate showed a decrease of 3·4 per 1000, and the proportion due to deaths of infants under 5 years of age showed a reduction of 4·3 per cent. There was great variation in both the birth- and death-rates in different parts of the island.

Deaths from malaria in Kingston numbered 22, as against 25 in the previous year, and from fever (not otherwise defined) 21, against 29. There was no vote for the abatement of malaria during the year, and the Commission was dissolved, leaving the works contemplated not quite complete. It is satisfactory to note that the position reached in 1912–13 has been maintained, and that there has been a further slight decrease in the number of victims from this malady. It must, however, be recollected that until measures for abatement of malaria are universal throughout the island the disease cannot be wholly eliminated from the statistics of Kingston, as the general penitentiary, the lunatic asylum, the public hospital, and other institutions draw their inmates from all parts of the colony, and many persons come from the country for medical advice and treatment. Emigrants returning from the malarious portions of Central America also contribute materially to the number of cases.

Salvarsan was utilised in the treatment of yaws and syphilis in the public general hospitals in 778 cases, and in 90 at out-stations, the patients returning to their homes after the operation on these last-mentioned occasions. One death occurred in hospital, and 46 patients remained under treatment, while all the others are reported to have had their symptoms cured. Reports have also been received of 40 cases treated in the Kingston and St. Andrew Poor-house, and 14 in the St. Ann Poor-house. One patient died 21 days after a second injection, and one 73 days after the first (but unfortunately no post-mortem examination was made in either case and the causes of the deaths have not been ascertained), and one remained under treatment, the remainder having their symptoms cured or much improved. Some of these cases were of 7 to 10 years' duration, and apparently hopeless under the treatment formerly resorted to, the patients lapsing into pauperism and becoming inmates of the poor-houses. Nearly all of them had a complete recovery and several were able to return to work. This remedy promises under proper safeguards to solve the problem of preventing the ravages due to yaws and syphilis. There were 11,945 attendances on yaws patients without salvarsan treatment, 6272 being first visits. The deaths registered as due to yaws and syphilis during the year numbered 244.

A special feature of the medical returns is the decrease of 2347 in the number of cases of malaria treated in the hospitals and of 25 in the mortality from that disease as compared with the previous year. The Registrar-General's return shows a decrease of 168 in the total number of deaths in the island attributed to malaria, equal to 31·21 per cent. Eighty of the deaths are not medically certified, but as the percentage of decreases shows so near an approximation to the hospital cases the figures may be regarded as substantially accurate. The superintending medical officer has submitted no comments on these figures, but he has furnished reports by various district medical officers showing in most cases that some attention is being paid to the question of mosquito reduction by the local health authorities. It is understood that the late Malaria Commission, acting as they believed on the theory and practice which has proved effective elsewhere, endeavoured to abate the breeding of malarial mosquitoes and to diminish the sources whence the reduced number of mosquitoes could become infected, thus rendering as many as possible harmless as transmitters of the disease.

The number of persons thymolised for hook-worm during the year was 8204.

The total number of patients treated in the public general hospitals during the year was 30,716, and the number of deaths in hospitals was 617. Of the latter, 54 were due to malarial fever, 5 to skin diseases, 91 to diseases of the digestive system, 30 to local injuries, 45 to diseases of the respiratory system, 38 to diseases of the circulatory system, 7 to diseases of the cellular tissue, 17 to ankylostomiasis, 15 to syphilis, 16 to anæmia, and 1 to blackwater fever.

Dr. Seidelin, of the Liverpool School of Tropical Medicine, paid a visit to the island for the purpose of investigating "vomiting sickness," and Dr. Scott, the Government bacteriologist, was associated with him in so far that he assisted him in certain portions of his work, the Government laboratory being placed at his disposal. By the process of eliminating cases, loosely termed "vomiting sickness," which were traceable to specific causes, and grouping the remainder which showed similar characteristics, it was hoped that the disease would be recognised, but the results have been negative. The theory of yellow fever has been exploded, and Dr. Scott advances the suggestion that "the rapidity of progress (or, in rarer instances, rapid and complete recovery) rather indicates the action of a poison," adding that "since feeding experiments have proved negative, and chemical tests (which in former years have been repeatedly tried by the island chemist) have revealed none of the usual poisons, and no signs of alkaloids, the poison (if such it be) is one which rapidly leaves the stomach or is rapidly decomposed: for example, it may be of the nature of a glucoside," and "the only suggestion I can offer as to the source of this hypothetical poison is that, since one can never obtain any history to implicate any particular article of food, it is due to something which is apparently dangerous only at certain times of the year, some fruit, perhaps, or vegetables, or, what in my opinion is more probable, some growth (fungus, yeast, moulds, &c.) on or in this food, rendering it toxic."

Dr. L. Sambon also visited the island, accompanied by Captain Siler, M.D., of the United States army, to make investigation into the prevalence of pellagra, and the Government bacteriological staff is continuing the investigation.

The Central Board of Health has given much attention to questions of public health, especially in connexion with measures for the prevention of plague, for the destruction of the hook-worm, for the avoidance of infection from consumption, &c. Certain leaflets prepared or obtained by them have been widely circulated, and the local health authorities are now in possession of regulations embracing a wide range of duties bearing on the prevention of diseases, the notification of infectious diseases, &c. Some system is gradually being infused into the operations of the local health authorities, and as these become more efficient it may be confidently expected that the health of the population will improve.

The Lepers' Home had 111 patients on March 31st, 1913. There were admitted during the year 22; 4 were discharged, 1 absconded, 8 died, leaving on March 31st, 1914, 120. The death-rate was 6 per cent. The medical superintendent reports that he has abandoned the treatment by nastin after a fair trial, and that he has been using "antileprol" for over two years with very excellent and gratifying results. He explains that "antileprol" is a refined product of chaulmoogra oil.

OFFICIAL MANNERS.

WE are asked by the clerk of the Ilford urban district council to state that the postcard, which was reproduced under the above heading in this column last week, was despatched, through the inadvertence of a temporary clerk, in mistake for another printed form of rejection intended to be sent in a closed envelope to unsuccessful applicants for appointments under the council. We understand that each applicant who received one of the offending postcards has now been written to to this effect, with an expression of regret for the error.

CEREBRO-SPINAL MENINGITIS IN CRETE.

Mr. E. C. D. Rawlins, His Majesty's Vice-Consul in Crete, in a recent report to the Foreign Office, writes: "The years 1912-13 have been noticeable for outbreaks of cerebro-spinal meningitis and, towards the end of the latter year, small-pox. The meningitis outbreak at one time assumed serious proportions, but the authorities took energetic action and the disease gradually died down. It appears, though, that it has become nearly endemic in the Candia district, and some cases are always to be found there. Candia seems to be peculiarly unhealthy, much more so than the towns of Canea and Rethymo, and this state of affairs is said to be due to the unsatisfactory water-supply in the former town. On the whole, however, it may be said that the island of Crete enjoys a most salubrious climate. The total population of the island at the last census was 336,151, that of the three principal towns being—Canea, 24,399; Candia, 25,185; and Rethymo, 9086."

PERKINS'S TRACTORS.

To the Editor of THE LANCET.

SIR,—Respecting these tractors, which have received interesting notices in THE LANCET of Sept. 12th (p. 728) and Oct. 10th (p. 928) last, I remember that Lord Byron's "English Bards and Scotch Reviewers" has a reference to them:—

> "The cow-pox, tractors, galvanism, and gas,
> In turns appear, to make the vulgar stare,
> Till the swoln bubble bursts—and all is air."

Quite true—as far as the tractors are concerned!

I am, Sir, yours faithfully,
Santiago, Chili, Nov. 16th, 1914. H. BOSHOUWERS.

KING ALBERT'S BOOK.

THIS handsome book,[1] published this week, is a worthy expression of world-wide tribute to the outstanding man and outstanding nation of an epoch. It contains 238 contributions in speech or song, music or picture from royalties and other potentates, diplomatists and statesmen, professors, artists, men and women of letters, ecclesiastics, scientists and medical men, of various nationalities. The editor, Mr. Hall Caine, contributes an introduction, and an excellent portrait of King Albert in uniform constitutes the frontispiece. The book is admirably bound and the work of the publishers cannot be too highly praised. The entire proceeds are to be devoted to the *Daily Telegraph* Belgian Fund. Many a waiting-room table will surely be enriched by its presence.

SUNSHINE AND STRAWBERRIES AT SALCOMBE.

A CORRESPONDENT writing from Salcombe, South Devon, states: "Last week (I am writing on Nov. 23rd) I had on my table peas, French beans, globe artichokes, tomatoes, and strawberries fresh from my garden, and grown without any special attention at all. The strawberries have been our chief dessert for more than six weeks now, although the same plants gave us a splendid crop in June. To-day roses are flowering gaily, and one can scarcely realise the awful weather experienced north. Those fortunate enough to live in the houses sheltered from the north-east enjoy a warm and sunny environment. Last winter we found an aloe in full flower and bunches of subtropical flowers were gathered." All this within five hours' journey of London should sound attractive to those needing real rest in these troublous and strenuous times.

ROYAL METEOROLOGICAL SOCIETY.

AT a meeting of the Royal Meteorological Society held on Dec. 16th at the Surveyors' Institution, Westminster, a paper was read by Mr. A. E. M. Geddes, M.A., entitled "Observations of the Upper Atmosphere at Aberdeen by Means of Pilot Balloons." The observations were made at the Observatory, King's College, during the years 1912 and 1913, and in every case two theodolites were used, thus securing an accurate determination of the flights to a level of 3000 metres. In clear weather the upward velocity of the balloon was shown to be fairly uniform, but to depend on more than the free lift. When clouds are present they influence considerably this velocity, the effect differing according to the nature of the cloud. The gradient wind velocities and directions have been calculated and a useful comparison made with those actually found by observation.

A SERVICE MATCH-BOX COVER.

Messrs. Bryant and May, of Fairfield Works, Bow, London, E., have just introduced a metal match-box cover designed for the use of officers and men in the Expeditionary Force. The cover affords protection to the matches and rubber against wet. Its shape resembles a miniature coal-scuttle, with a hinge and pin at one of the corners. The device will no doubt be appreciated.

BARNET X RAY PLATES.

WE have received from Messrs. Elliott and Sons, Limited, samples of the Barnet X Ray Plates, which have been exclusively prepared for radiographic purposes. They are rich in silver, and we have found it easy to obtain good results with exposures rather less than usual. They seem sensitive to the fluorescence of the intensifying screen, and should become popular for this purpose. Development is the same as for other plates, and they appear to give equally good results with any of the developing agents in ordinary use. We note that a useful size for taking radiographs of the long bones has been introduced—10 in. × 6 in.—which effects a saving over the usual 10 in. × 8 in., the extra 2 inches width of the latter representing so much waste in a large proportion of the exposures made.

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[1] London: Hodder and Stoughton. Pp. 188. Price 3s.

WE have received from the publisher, Mr. T. Askew Miller, of Capetown, a useful little pamphlet on the House Fly, a Carrier of Disease and Death, compiled by Mr. F. W. Fitzsimons, F.Z.S., of Port Elizabeth Museum. The first edition of 10,000 copies has been distributed free amongst the columns of the South African forces in the field, with a view to enlisting the active coöperation of the men in the destruction of flies as the carriers of typhoid and other diseases. The pamphlet describes in simple terms the life history and habits of the fly, and the importance of conscientious attention to the carrying out of sanitary measures is thus enforced.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 16th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 10	29·510	N.	0·03	53	47	42	43	44	Raining
,, 11	29·594	E.	0·30	49	46	39	40	40	Overcast
,, 12	29·460	S.E.	0·25	51	46	40	44	44	Raining
,, 13	29·230	S.W.	0·40	63	50	44	45	46	Raining
,, 14	28·820	S.W.	0·41	62	51	44	44	45	Overcast
,, 15	29·020	N.E.	0·06	50	45	42	41	42	Raining
,, 16	29·664	W.	...	60	47	40	41	42	Overcast

The following magazines, journals, &c., have been received:— Political Quarterly, St. Paul Medical Journal, Monthly Cyclopedia, J. B. Murphy Clinics, Nordiskt Medicinskt Arkiv, Review of Neurology and Psychiatry, Maryland Medical Journal, American Journal of Medical Sciences, Surgery, Gynecology, and Obstetrics, Albany Medical Annals, Cleveland Medical Journal, Pharmaceutical Journal.

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T.—Mr. C. F. Thackray, Leeds.

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W.—Dr. W. R. Watson, Tokyo; Miss Willmott, Guildford; Dr. W. G. Willoughby, Eastbourne; W. S. S.; West Ham Hospital, Secretary of.

Y.—Dr. E. McKillop Young, Hulan Fu, China.

The Croonian Lectures

ON

MODERN ASPECTS OF CERTAIN PROBLEMS IN THE PATHOLOGY OF MENTAL DISORDERS.

Delivered before the Royal College of Physicians of London,

By EDWIN GOODALL, M.D. Lond., B.S.,
F.R.C.P. Lond.,
MEDICAL SUPERINTENDENT, CITY OF CARDIFF MENTAL HOSPITAL.

LECTURE IV.*

Sir Thomas Barlow and Gentlemen,—I propose in this lecture to lay before you the experience which has been gained and the information which has accrued from the application of the method of complement deviation, and from the study of the cerebro-spinal fluid in psychiatry. Since 1909 I have, in conjunction with my colleagues, and more especially with Dr. H. A. Schölberg, of Cardiff, given systematic attention to these matters, we having had at our disposal abundant material in the wards of the Cardiff Mental Hospital, controlled by concurrent observations upon patients from the Cardiff Infirmary and private practice. Throughout the period of our observations I have made regular reference to the current literature, with a view to comparison.

The Wassermann Reaction.

In the *Journal of Mental Science* for April, 1911, Schölberg and I published an account of our observations upon the Wassermann reaction in 172 cases of insanity of all kinds, and upon 66 control cases, syphilitic and other, not insane. This article contained full references to the work that had been done up to that date. The observations have been systematically carried on, and a brief account of them was given by us at the last International Congress of Medicine. In respect to the complement-deviation test in cases of dementia paralytica I am disposed to think that medical men not engaged in the domain of mental disorders, and even many so engaged, are under the belief that this is a *chose jugée*, and that in general paralysis the Wassermann test is positive in 100 per cent. of the cases, whether in the serum or the cerebro-spinal fluid. The observations which follow will show that the matter is not so simple and definite as this. Table XX. embodies, to the best of my knowledge, all the important observations upon the frequency of a positive reaction in the serum and cerebro-spinal fluid from 1907 to 1913 inclusive, though some it has been necessary to omit for the curious reason that the authors have omitted to state which of the two fluids in question they worked with.

An examination of Table XX. shows that the results obtained by the numerous observers cited are by no means uniform and by no means in accord with the belief to which I have referred, even such as are quite recent. Schölberg and I, in our first series of observations, worked with 0·1 c.c. of the reagents of the test, the patient's amboceptor being used in a solution of 1 in 10; and as antigen we employed, in common with a large number of other workers, some, at any rate, of whom obtained a high percentage of positive results, alcoholic solution of guinea-pig's heart. Our percentage of positive results with the serum

Table XX.—*Results of the Wassermann Test in Dementia Paralytica from 1907 to 1913 inclusive.*

Author.	No. of cases.	Frequency of reaction in—		Remarks.
		Serum.	Cerebro-spinal fluid.	
		Per cent.	Per cent.	
Plaut, Boas and Neve, Citron, Foerster, Marinesco, Fischer, Nonne.	—	100·0	52 with 0·2 c.c.* 90 with 0·4 c.c.*	1907–1910. *Boas and Neve.
Wassermeyer and Bering, Hübner, Lesser.	—	90 to 95	50	1907–1910.
Smith and Candler (from the literature).	—	86·6	—	,,
Bacelli.	—	80·9	—	,,
Muirhead.	35	76·7	71·4	,, (Cases in all stages.)
Noguchi.	—	65·0	73	1907–1910.
Marie, Levaditi. Yamanouchi.	—	59·0	74 (Further Series, 93).	,,
Eichelberg.	—	—	100	,,
Plaut, Wassermann, Marinesco, Raviart, Breton, Petit, Nonne and Holtzmann, Smith and Candler, Henderson, Mott, Candler.	—	—	90 or over.	,,
Williamson, Stortz, Kafka; general literature according to Smith and Candler, and E. Jones.	—	—	85–90.	,,
G. Meier.	—	—	70	—
Candler.	69	—	97	1911.
,,	109	98	100	1912.
Wolff.	30	93·3	90	1910.
Browning and McKenzie (cited by Candler).	—	96·0	—	—
McCampbell and Rowland.	56	96·0	85·7	,,
Richter.	117	—	89·7	1910 (excluding 11 cases with a "weak reaction").
Krenfeld.	92	—	94	1910.
,,	—	93·8	98·5	1912.
Plaut (literature).	359	96·0	—	1909.
,, ,,	276	—	93·0	—
Ledermann.	18	77·7	—	1909.
Nonne.	—	95 0	90·0	1909.
Frankel.	—	80·0	—	1909.
Plaut (own and literature).	793	92·0	—	Chief results up to 1911.
,, ,,	854	—	89·0	—
Klieneberger.	60	100·0	98·6	1911.
Karpas.	72	68 0	68·0	1912.
Bonfiglio.	51	92·0	92·0	1913.
Bundschuh.	71	100·0*	100·0*	1913. *Includes deviation of various degrees.
Grütter.	67	100·0	—	1913.
,,	42	—	97·0*	*Large amounts of fluid.
Boas.	—	100·0	91·0	1911.
Eyman and O'Brien.	137	71·0	76·0	1912.
Nabarro.	94	67·0	70·0	1912.
Bisgaard.	108	96·0	79 0	1913.
	96	—	89·0*	*With 0·6 c.c.
Eichelberg.	3200	97·0	98·0	1912.
Kirchberg.	100	93·0	78 0	1913.

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* Lectures I., II., and III. were published in The Lancet of Dec. 5th (p. 1287), 12th (p. 1343), and 19th (p. [illegible]), 1914, respectively.

No. 4765.

in dementia paralytica (49 cases) was 75·50; retardation of hæmolysis occurred in 6·12 per cent. And here I would state that throughout our observations, over the whole period of time, from 1909 to 1913 inclusive, we employed at each sitting a known case of syphilis and a known non-syphilitic as controls to the cases of insanity, so that whatever the result was with the serum of the insane (whether general paralytics or other) typical results were obtained with the two controls. A series of cases of syphilis, numbering 38, of whom nearly four-fifths were in the tertiary stage, were tested precisely in the same way as the general paralytics; the serum of these yielded 89·47 per cent. of positive results with the serum.

As regards the cerebro-spinal fluid, in this first series 41 cases gave positive results in 41·46 per cent. and retardation of hæmolysis in 9·75 per cent. In our further observations we employed as antigen alcoholic extract of congenital luetic liver, and for a time continued to use 0·1 c.c. of the reagents of the test, so that the total number of sera examined in this way reached 67 and of cerebro-spinal fluids 60. A positive Wassermann resulted in 67·16 per cent. in the serum, with retardation of hæmolysis in 7·46 per cent. and a negative reaction in 23·88 per cent.; in the cerebro-spinal fluid these figures were 36·66 per cent. and 13·33 per cent. and 48·33 per cent., so that our percentage of positive results was still less with the larger number of observations and in both fluids. In all observations thereafter not less than 0·2 c.c. of the various reagents of the test have been used with a view to diminishing experimental error. The total number of sera (dementia paralytica) examined in this way was 39 and of cerebro-spinal fluids the same. With the serum the results were positive Wassermann in 56·41 per cent., negative in 25·64 per cent., and retarded hæmolysis occurred in 17·94 per cent. With the cerebro-spinal fluid: positive Wassermann in 30·77 per cent., negative in 48·71 per cent., and retarded hæmolysis in 20·51 per cent. So that the percentage of positive results was still further reduced in this last series, both as regards the serum and the cerebro-spinal fluid.

The number of cases in which a merely retarded hæmolysis was recorded in both fluids is a feature. Only those cases were recorded as positive where the blood corpuscles were completely deposited, leaving a water-like supernatant fluid. It is to be observed that very few authors indeed make mention of cases of retarded hæmolysis. I have pointed out in Table XX. that Bundschuh, who in 1913 gave results in respect of 71 cases, obtaining 100 per cent. of positive reactions in both fluids, states that these cases include instances of deviations of various degrees. Candler observes that Plaut has stated that he has met with all grades of positive reactions with the fluids in general paralysis. Candler himself has had cases in which the reaction was quite slight. In the absence of a definite statement to the effect that results are classified in three categories (hæmolysis completely absent, complete, and retarded) one takes leave to doubt the accuracy of a great number of recorded results. All the fluids used in our observations were thoroughly centrifugalised before inactivation; I have only found two references to this point, one by Klieneberger, who centrifugalised all the cerebro-spinal fluids in his observations, the other by Nabarro, who only centrifugalised when the cerebro-spinal fluid contained blood. Quite recently von Wassermann and Lange[1] have shown that the lymphocytes are the source of the Wassermann reaction in the cerebro-spinal fluid. The centrifugalisation of the fluid in our cases, with the use of the supernatant fluid, will therefore go towards accounting for our low percentage of positive results. And the importance of stating whether or not the fluid was centrifugalised is enhanced by these observations. There is further noticeable about the published work a singular absence of statement as to the stage of the malady and the mental and physical conditions of the patient at the date of the test. The general paralytics with whom the observations here recorded are concerned, 106 in number, were, with some six exceptions, advanced in the disease at the date of examination; in all, with these exceptions, the disease was well over a year old, and very frequently over two years old. The great majority were considerably reduced physically, and exhibited various degrees of dementia. These cases were therefore, with few exceptions, in the late second or in the third stage of the disease. In any future record of the results of the complement-deviation test in dementia paralytica it appears to me essential that cases should be placed in groups, according to duration and to clinical aspect (whether fulminating, progressive, quiescent, or in actual remission, or near the end of the malady, or in or recovering from seizures). Statistics should be based upon some such grouping. I may in passing comment upon the extreme paucity of records of the results of the test in the earliest stage of the disease (dementia paralytica), in which it would be seen by experienced general practitioners and consultants. Plaut[2] states that the Wassermann reaction is positive in the earliest stages both in the serum and cerebro-spinal fluid, but I find no statistical evidence on the point.

Variability of the Wassermann Reaction in Dementia Paralytica.

Considerable experience enables me to deal with the point of the constancy or otherwise of the reaction in different phases or aspects of this disease, and, in respect to the roughly divisible, classical stages, in the second and third stages. I would first review briefly the statements made by various authors concerning this point. As regards the applicability of the complement-deviation test in the very earliest stage of the disease, Plaut[3] has stated that the reaction is present in its very earliest stage; in this he is supported by others; thus, Rossi,[3] Boas and Neve,[3] Bundschuh,[4] Klieneberger,[5] Zingerle.[6] According to some of these authors a positive Wassermann is obtainable in the serum and cerebro-spinal fluid before a clinical diagnosis can be made. The variability of the reaction in both fluids at different periods of the disease in the same individual, without, however, definite correlation between nature or strength of reaction and phase or degree of severity of the disease, is referred to by several writers: thus, Marinesco,[3] Kafka,[3] Boas and Neve,[3] Plaut,[3] Rossi,[3] Hübner and Hallarger,[3] Raviart, Breton, and Petit,[3] Wassermeyer and Bering,[3] Bundschuh,[4] Nabarro,[7] Eyman and O'Brien,[8] and Candler.[9] It may be affirmed that the consensus of opinion is against any correlation of the kind referred to. Some writers have, however, recorded instances of a feeble or negative Wassermann reaction in both fluids in stationary conditions, or where the disease was progressing slowly, or tending towards remission; thus, Plaut,[3] Obregia and Bruckner,[3] Neue,[10] and Schoenhals.[11] It has also been observed that cases which give a negative Wassermann often show clinical peculiarities (thus, von Roesen[12]). Statements as to the behaviour of the test during remissions appear to be exceedingly rare; I am able to find only two of any importance, one by Kafka,[3] according to which five such instances gave a positive reaction, and this author considers that remissions do not affect the reaction unless they are of a very marked kind. The other statement is by Bundschuh,[4] who also obtained a positive reaction and in four marked instances. The existence of cases of dementia paralytica in which the test is negative in both fluids over long periods I find recognised by Kafka,[3] Binswanger[13] (who used large amounts of amboceptor), Neue[10] (his were not stationary cases), Nabarro.[7] The last named employed increasing amounts of patient's amboceptor, and is unable to agree with the statement of well-known writers that a negative reaction in the cerebro-spinal fluid is unusual.

From the foregoing statements and from a survey of the literature, it has to be recognised that the

TABLE XXI.—*Variations in the Wassermann Reaction in Individual Cases at Different Periods in the Course of the Case.*

Case and age.	Duration of disease at first examination.	Blood serum. H. + or 0.	Cerebro-spinal fluid, H. + or 0.	Remarks.
2. E. J., 51 years.	13 months.	1 in 10.	1 in 10.	
		0·1 c.c.	0·1 c.c.	
		0	0	
		r.		25/4/10
		+	0·4	13/5/10 Remission.
		+	+ 0	28/11/10
		0	+	23/1/11. Relapse.
		+	+	13/3/11
		+		20/3/11 Remission more
		1 in 10. 1 in 5.	1 in 10. 1 in 5.	or less marked. v.s.r.
		0·2 0·2 0·3	0·2 0·2 0·3	
		0 0 0	+ + s.r.	10/12/12
		+ + +	+ + +	22/4/13
		+ + v.s.r.	+ + +	27/5/13. Bedridden; degraded.
		+	+	12/8/13. Bedridden; feeble. Died 18/10/13.
6. B. L., 25 years.	(?) Advanced.	1 in 10.	1 in 10.	
		0·1 0·4	0·1 0·4	
		0 0	? 0	15/10/12. Pronounced; demented type.
		0·2 0·4 0·6	0·2 0·4 0·6	
		+ + s.r.	+ s.r. 0	14/1/13. Well-marked remission.
		r. 0 0	+ r. 0	14/3/13. ,, ,,
		+ 0 0	+ 0 0	24/6/13. Disease active again.
7. J. W., 39 years.	18 months.	1 in 10	1 in 10.	
		0·2 0·4 0·6	0·2 0·4 0·6	
		+ + +	+ 0 0	19/11/12. Marked remission.
		0·1	0·1	
		+	0	3/3/12. Remission.
		0·2 0·4 0·6	0·2 0·4 0·6	
		0 0 0	r. 0 0	3/4/13. Slowly progressive.
		+ 0 0	0 0 0	17/6/13. Progressive.
		+ + +	+ + +	1/7/13. Facial spasms two days ago.
		+ + +	+ r. 0	30/9/13. Stationary.
		0 0 0	+ r. 0	16/12/13. ,,
			1 in 5. Pure C.S.F.	
			0·2 0·2 1 c.c.	16/12/13. ,,
		+	+ 0 0	10/2/14. ,,
8. M. J. D., 32 years.	At least two years.		1 in 10.	
			0·2 0·4 0·6	
		+ + +	+ 0 0	19/11/12. Acute mania, exaltation; readmitted after discharge in remission.
		+ r. 0		10/12/12 Subacute.
		r. 0		31/12/12
		+ r. 0	r. r. 0	20/5/13. Well-marked remission.
		+ + +	+ + +	22/7/13. ,, ,,
		+ + +	+ r. 0	30/9/13. Third stage; bedridden.
9. W. Y., 42 years.	At least one year.	1 in 10.	1 in 10.	
		0·2 0·4 0·6	0·2 0·4 0·6	
		0 0 0	0 0 0	29/11/12. Remission; working.
		0 0 0	0 0 0	8/4/13. Disease quiescent.
12. A. O., 47 years.	At least 20 months.	+ + +	+ + +	23/4/13. In seizures; died next day.
13. W. G. F., 44 years.	Advanced.	+ + +	+ + +	7/10/13. Physical remission.
			+ + +	11/11/13. ,, ,, Works in ward.
			Pure C.S.F.	
			0·2 0·4	
			+ +	,, ,, ,, ,,
		+ + +	+ +	9/12/13. Remission; especially physical.
			Pure C.S.F.	
			0·2 1 c.c.	
			+ +	,, ,, ,, ,,
			+ 0	20/1/14. ,, ,, ,,
14. W. M., 44 years.	Two years.	1 in 10.	1 in 10.	
		0·1	0·1	
		+	+	28/2/10. Early remission.
		+	+	12/12/10. More marked remission.
		+	r.	13/3/11. Still in remission.
16. D. F. B., 40 years.	Advanced.	0·2 0·4 0·6	0·2 0·4 0·6	
		+ + +	+ + +	25/11/13. Demented, advanced.
			Pure C.S.F.	
			0·2 1 c.c.	
			+ 0	,, ,, ,,

r. = Retarded. s.r. = Slightly retarded. v.s = Very slightly retarded.

Wassermann reaction may be negative at a given test in both the serum and cerebro-spinal fluid in clinically certain cases of dementia paralytica, and when the ordinary amount of the patient's amboceptor is employed. I am aware of the assertion as to the feasibility of converting a negative into a positive reaction by increasing the amount of this constituent of the test, and propose to deal with the point shortly. One may, however, point out that this assertion is based as yet on far too little published evidence. The reaction is negative in pronounced cases from time to time in the course of the case; in stationary conditions it is very often negative. (See Zaloziecki,[14] Schönhals.)[11]

I now submit to you extracts from a table exhibiting instances from my experience of the points referred to above. (Table XXI.) Some of these cases show that the important point of the repetition of the test has been attended to; this is one of the points on which extremely little precise information exists. In the course of these particular observations 99 cases of dementia paralytica were examined, but in these 226 examinations were made. I may draw your attention to certain features in these cases, leaving for the moment those connected with remissions, and the results of the use of increasing amount of amboceptor.

No. 1 (this case not reproduced) shows variations in the serum and cerebro-spinal fluid reactions without clinical change; also a tendency to a negative Wassermann as the disease becomes stationary or quiescent. No. 2, after more than four years of the disease, the patient being very advanced in it, negative reactions in both fluids, even with large amounts of amboceptor. No 7, two days after a slight exacerbation (local spasms), negative reactions in both fluids, with high amounts of amboceptor. Varying reactions in the serum without clinical change (30/9/13, 16/12/13, and 10/2/14). Retarded and positive reactions, disease stationary. No. 8, in florid state, very acute symptoms; negative reaction in serum, also in cerebro-spinal fluid with ordinary amount of amboceptor. Disease process milder; reaction in serum retarded or positive. In last stage, disease 3 years' duration; anomalous reactions. No. 12, negative reactions in both fluids in considerable amounts; patient in convulsions when examined. No. 16, advanced in disease, reactions negative with considerable amounts of both fluids. Since the above table was compiled another marked instance of lack of correlation occurred under my care, the case being that of a patient in an advanced stage of the disease, bedridden; with the serum, Wassermann was positive with 0·2 c.c. of a 1 in 5 dilution; at the same time negative with the cerebro-spinal fluid with the same strength and also with 0·2 c.c. and 1 c.c. of the pure fluid.

The relationship between the reaction and states of remission is illustrated by the following cases. No. 2. The reaction is seen to be positive sometimes in remission in both fluids. No. 3 (not reproduced). Positive and negative in the cerebro-spinal fluid. No. 6. Reactions retarded and positive in both fluids. No. 7. Reaction negative in the serum, positive in the cerebro-spinal fluid. No. 8. Reaction now positive, now negative in both fluids. No. 9. Reaction positive in both fluids. No. 13. Reactions negative in boths fluids, but once positive in cerebro-spinal fluid pure and in large amount. No. 14. Reactions negative in both fluids. And another case of marked remission, since the table was compiled: W + with 0·2 c.c. of pure cerebro-spinal fluid. From these observations it appears that there is no correlation between the reaction and a state of remission, a positive reaction being obtained in this state as often as a negative; and the reaction varying in a given case. This is in accord with the lack of correlation observed in other phases of the disease. Nevertheless, in respect to remissions as well as to the very earliest stage of dementia paralytica, more observations are needed; and especially in respect of those very pronounced remissions in which the patient is well enough to have his liberty and carry on his occupation.

If I may here diverge from my course a moment I would call your attention to the fact that there are cases of dementia paralytica in which the recovery from the morbid manifestations is so marked, and especially so long-lasting, that the expression "remission" is far too weak to apply to them. Rather should we speak, with Petrazzini,[15] of a "cure with defect." This writer describes a well-observed case of the disease of 23 years' standing, in which a remission occurred in the fourth year, and thereafter the patient's condition remained such that it is best described by the expression employed above, and for 19 years. In this case the Wassermann test was positive on two occasions during the period of comparative health. Petrazzini has collected two series of cases from various authors; in the first, consisting of 25 cases, the disease lasted from 13 to 26 years, in one 32 years. In the second series there are cases lasting from 9 to 25 years. Spirochætæ have been shown by Neisser to live for a great many years in gummata, and in the lesions of dementia paralytica they may persist, perhaps indefinitely, in a resting form, becoming from time to time active again.

Results of Increasing the Patient's Amboceptor (Serum and Cerebro-spinal Fluid) in the Complement-deviation Test in Mental Disorders.

Not long—probably from one to two years—after the first application of the Wassermann test in dementia paralytica the practice was advocated of employing a larger amount of the patient's cerebro-spinal fluid where a negative result had been obtained with the usual amount. In our article published in 1911, already referred to, Schölberg and I mentioned the statement of Boas and Neve, the Danish observers, to the effect that, whereas they only obtained 52 per cent. of positive results in the cerebro-spinal fluid in dementia paralytica with 0·2 c.c. of the fluid, the percentage rose to 90 when they took double this amount. Of late years the statement has been made with considerable confidence that the failure to obtain a positive result with the cerebro-spinal fluid in this disease was due to the use of insufficient fluid. Extremely little evidence has been produced in support of this. Therefore Schölberg and I have for some two years tested this point. It is not surprising, perhaps, that evidence has been lacking, for if the Wassermann test as usually performed is laborious enough, how much more so its performance with three or four strengths of the patient's serum and cerebro-spinal fluid ? I would therefore venture to lay stress upon the results collected by my colleague and myself, as I am not aware that any similar ones have been published in respect of the psychoses. Table XXII. shows the results we obtained by increasing the patient's amboceptor, both serum and cerebro-spinal fluid, the other constituents of the test remaining constant. The results in dementia paralytica were controlled, as shown, by similar observations upon cases of other psychoses.

TABLE XXII.—*Results Obtained by Using Patients' Serum-Amboceptor in Increased Amount, the other Reagents of the Test Remaining Constant (0·2 c.c.).*

1.—*Dementia Paralytica.*

A Total + or ret. Results.	B Altered to r. or 0.	C Results in B altered to r. or 0.
0·2 c.c.	0·4 c.c.	0·6 c.c.
58	20	13
	Of which 13 altered to 0 = 22·4%.	Of which 8 altered to 0 = 13·8%.

By using up to 0·6 c.c. amboceptor additional positive Wassermann's = 36·2%.

2.—*Other Mental Disorders.*

A	B	C
72	5	7
	Of which none altered to 0.	Of which 4 altered to 0 = 5·5%.

By using up to 0·6 c.c. amboceptor additional positive Wassermann's = 5 to 6%.

Results Obtained by Using Patients' Cerebro-spinal Fluid Amboceptor in Increased Amount, the other Reagents of the Test Remaining Constant (0·2 c.c.).

1.—*Dementia Paralytica.*

A Total + or ret. Results.	B Altered to r. or 0.	C Results in B altered r. or 0.
0·2 c.c.	0·4 c.c.	0·6 c.c.
72	39	23
	Of which 18 altered to 0 = 25%.	Of which 17 altered to 0 = 23·6%.

By using up to 0·6 c.c. amboceptor additional positive Wassermann's = 48·6%.

2.—*Other Mental Disorders.*

A	B	C
73	11	10
	Of which 2 altered to 0 = nearly 3%.	Of which 3 altered to 0 = 4·1%.

By using up to 0·6 c.c. amboceptor additional positive Wassermann's = 7%.

The table shows that a negative Wassermann or a merely retarded hæmolysis with the usual amount (0·2 c.c.) of serum-amboceptor is converted into a positive Wassermann by taking up to 0·6 c.c. in 36 per cent. of cases of dementia paralytica and 5 to 6 per cent. of cases of other mental disorders. In the case of the cerebro-spinal fluid these figures are respectively 48·6 per cent. and 7 per cent. In both cases the conversion is some seven times more frequent in dementia paralytica. These results afford, therefore, justification for the recommendation that a larger amount of patient's amboceptor be taken in the former disease where negative or incomplete results are obtained with the usual amount. No doubt a larger experience is required (in order to which several observers are necessary), but it is apparent that the fluids of non-general paralytics in exceptional cases will give a positive reaction when unusual amounts are used. If now we consider the positive results obtained by Schölberg and myself in 39 cases of dementia paralytica with 0·2 c.c. amboceptor, which I have already stated, in the light of the information furnished by Table XXII., we find them modified as follows. In respect to the serum 36 per cent. of the 17 cases of negative Wassermann or merely retarded hæmolysis would have given a positive reaction had 0·6 c.c. amboceptor been taken, raising the percentage of cases of positive Wassermann with the serum from 56·41 to nearly 72 per cent. And with respect to the cerebro-spinal fluid 48·6 per cent. of the 27 cases of negative Wassermann or merely retarded hæmolysis would have given a positive reaction with the higher amount of amboceptor, raising the percentage of cases of positive Wassermann with the cerebro-spinal fluid from 30·7 per cent. to 64 per cent. These are very substantial increases: nevertheless, even with this fortification, our positive results fall considerably below those given by many writers. But I would emphasise the point that practically none of these states the amount of fluid which was worked with, nor the duration or degree of severity of the disease; in brief, the class of case. Furthermore, it is far from certain, as already intimated, that a rigid and uniform interpretation has been placed by various observers upon the expression "negative hæmolysis." I am interested to find that Muirhead and Nabarro (see Table XX.), who presumably worked with patients of much the same class as ours (and the former states that her cases were in all stages), at the Edinburgh and Wakefield Asylums, obtained 76·7 per cent. and 67 per cent. respectively of positive results in the serum and 71·4 per cent. and 70 per cent. respectively in the cerebro-spinal fluid—figures according well with those of Schölberg and myself, as estimated above. Since the above was written I have had the opportunity to work out the results actually obtained by us in the cerebro-spinal fluid with 0·6 c.c. of a dilution of 1 in 10 in a series of cases of dementia paralytica (76 tests) and of cases of other forms of insanity (72 tests), with no evidence of cerebro-spinal disease. The actual positive results obtained with 0·6 c.c. of 1 in 10 dilution in a series of examinations (respectively 68·42 per cent. and 6·94 per cent.) agree pretty well with those arrived at theoretically as explained above for dementia paralytica and later for non-general paralysis (respectively 64 per cent. and 8 per cent.).

Recent Observations on the Use of Increased Amounts of Amboceptor (Cerebro-spinal Fluid).

At this point it will be appropriate to bring before you the more recent statements respecting results obtainable by the method of detecting a complement-binding substance when in small amount in the cerebro-spinal fluid, that is, by using increased amounts of amboceptor, the "auswertungs methode" of German writers. About 1909 the teaching of the leading authorities, such as Plaut, was to the effect that a positive Wassermann in the cerebro-spinal fluid was obtained with the original method only in dementia paralytica, with the exception of rare cases of cerebro-spinal lues; the reaction was negative in other organic disease of the cerebro-spinal axis, and absent in syphilis when this axis was not involved. Nonne[16] in 1910 recorded the observation made by Hauptmann, working in his wards, to the effect that in lues cerebro-spinalis and in tabes, when the reaction was negative with the original method, a positive reaction was obtainable by using increased amounts of the fluid to be tested. Further researches in Nonne's wards have confirmed this observation. Hauptmann[17] later described his results in detail, and showed that in numerous controls, amongst which various non-syphilitic diseases of the nervous system figured, the negative Wassermann result was never converted into a positive by the procedure advocated. The reaction remained negative in such cases even when the patient had had syphilis. Whereas with 0·2 c.c. of the amboceptor fluid over 90 per cent. of cases of cerebro-spinal lues give, according to Hauptmann, a negative Wassermann, the result is usually positive with 0·4 to 1 c.c. Klieneberger[18] bears out Hauptmann's results, and points out further that the same results are obtained by reducing the amount of complement used instead of increasing the amount of cerebro-spinal fluid. Kafka[19] also confirms these results. In two cases of disseminated sclerosis, however, Eichelberg[20] obtained a positive reaction by using 0·6 c.c. of the cerebro-spinal fluid. Gruetter,[21] writing in 1913, observes that the "auswertungs methode" has increased the number of positive results in dementia paralytica. but less in this than in what he terms "metasyphilitic" diseases of the nervous system. Fraenkel,[21] who corroborates Hauptmann's work, states that by taking up to 1 c.c. of (apparently) pure cerebro-spinal fluid 96 per cent. of positive results are obtained in cases of cerebro-spinal lues. If these observations are borne out it will be necessary to make the test with this quantity before a diagnosis can be made. It is extraordinary that so few cases of cerebral lues, whether local or diffuse, give a positive reaction with small amounts of cerebro-spinal fluid as compared with cases of dementia paralytica. If it is assumed that in the latter disease the spirochæta is in an active and fully-developed condition it is remarkable that its demonstration in the cortex cerebri should be so difficult with the methods in vogue.

But to proceed: the early teaching seems in danger of direct contradiction as a result of recent work, which is to the effect that a positive reaction is obtained in the cerebro-spinal fluid in florid syphilis, without affection of the cerebro-spinal system (without evidence of such, that is). Thus, Gruetter refers to the publications of Nonne's school, to the effect that a positive reaction in the cerebro-spinal fluid is obtained by the "auswertungs methode" in a considerable percentage of cases of secondary syphilis. Bergl and Klausner[23] obtained the "4 reactions" in florid syphilis. They examined 30 cases, but in what percentage these reactions were obtained I am unable to gather. Fraenkel in 15 cases of recent florid syphilis, without nervous symptoms, obtained a positive reaction in the cerebro-spinal fluid in 5, using 1 c.c. He also finds that the 4 reactions may be present. Perhaps these results are due to inflammation of the meninges to a greater or less extent; under which conditions the complement-binding substance may pass from the blood, where it is abundant, to the cerebro-spinal fluid. It is clear that further experience with the "auswertungs methode," in the cerebro-spinal fluid, is needed in secondary and tertiary syphilis and in dementia paralytica, in order to a better understanding of its value and limitations. Table XXIII. shows the results of the Wassermann test upon a series of cases, increasing amounts of serum and cerebro-spinal fluid being employed. Nos. 1, 6, and 11 were clinically cases of cerebro-spinal lues, all having been under treatment in the infirmary before admission to Cardiff Mental Hospital. In all three the reaction in the cerebro-spinal fluid was negative until 1 c.c. of pure fluid was used. In No. 17 (tabes, not insane) Wassermann was negative even with that amount, positive, however, in No. 17A (general paralysis and tabes; stationary, chronic). No. 5 was clinically undoubtedly a general paralytic in a fairly quiescent condition; it is seen that the reaction was negative once even with 1 c.c. of pure fluid, positive with that amount on another occasion. No. 7, general paralytic, was also positive only with that amount. No. 13 was negative once with 0·2 c.c. of pure fluid. No. 21, general paralysis of the insane, positive with 0·7 c.c. pure fluid. No. 12, a general paralytic, positive first with 0·2 c.c. pure fluid. Nos. 14 (once) and 20, also general paralytics, likewise. In Nos. 16 and 18, clinically uncertain cases, either

TABLE XXIII.—*Showing Results of Increasing Amount of Amboceptor in Cases of Insanity and of Cerebro-spinal Disease.*

Case.	Disease.	Serum. H. + or 0. 1 in 10. 0·2.	Serum. H. + or 0. 1 in 5. 0·2.	Serum. H. + or 0. 1 in 5. 0·3.	Cerebro-spinal fluid. H. + or 0. 1 in 10. 0·2.	Cerebro-spinal fluid. H. + or 0. 1 in 5. 0·2.	Cerebro-spinal fluid. H. + or 0. 1 in 5. 0·3.	Pure C. S. F. 0 2	Pure C. S. F. 0·4	Pure C. S. F. 1 c.c.
1. W. H. B.	Cerebral gumma.	+	+	+	+	+	+			r.
,,	,,	r.	0	0	+	+	+	+		0
2. W. M.	? G.P.I. ? Cerebral lues.		+			+		s.r.		
,,	,,		+			+		+		+
3. B. P.	Non G.P. (demented).		+			+		+		
4. H. R.	G.P.I.		0			r.		r.		
5. W. G. F.	G.P.I. partial remission.				+	+	+	+	+	
,,	,,	+	+	+	+	+	+	+		+
,,	,,		+			+		+		0
6. E. K.	Cerebral lues.	0	0	0	+	+	+	+		0*
7. D. J. B.	G.P.I.	+	+	+	+	+	+	+		0
8. S. G.	Non G.P. (demented).	+	+	+	+	+	+	+		+
,,	,,		+			+		+		+
9. M.	Non G.P. (delusional).	+	+	+	+	+	+	+		+
10. G. A. J.	Dementia: paresis. Chronic alcoholic.	s.r	r.	r.	s.r.	s.r.	s.r.			
,,	,,	+	+	+	+	+	+	+		+
,,	,,		+			+		+		+
11. S.	Cerebro-spinal lues.	0	0	0	+	+	+	+		0
12. W. T. M.	G.P.I. third stage.	+	+	+	+	+	+	0		0
13. J. W.	G.P.I partial remission.	0	0		+	r.	0	0		0
,,	,,		+			+		+		0
14. S. J. K.	G.P.I. third stage.	+	+	0	+	+	v.s.r.	0		0
			0			+		+		0
15. N. M.	? G.P.I. (probably not).		+			+		+		+
16. A. B.	? G.P.I. ? Lues cerebri.	0·1 +			0·1 0					
,,	,, ,,	0·2 0			0·2 +	+	+			
,,	,, ,,		+			+		+		0
17.	Tabes dorsalis					+		+		+
17A.	G.P.I. and tabes dorsalis (stationary: chronic.)		+			+		+		0
18. D. R.	? G.P.I. ? Lues cerebri.	0·1 r.			0·1 +	0·3 r.	0·4 0·5 0 0			
,,	,, ,,	0·2 +	+	+		0·2 +	0·4 0·6 + +	+		0
19. M. C.	? G.P.I. ? Cer. lues.	+	0	r.	+	+	s.r.			
	? Inorganic.		r.			r.		+		+
20. F. H.	G.P.I. Bed-ridden; third stage.		+			+		0		0
21. C. B.	G.P.I. stationary.		+			+		+		0·7 c.c. 0
22. H.	Acute and recent mania.		+			+		+		1 c c. +

* With 1 c.c. of phys. salt sol. H—+ (Control experiment).
r.—retarded. s.r.—slightly retarded. v.s.r.—very slightly retarded

cases of general paralysis or cerebral lues, the diagnosis has not been settled by the Wassermann test, and their real nature is still obscure after from two to three years of observation. The non-general paralytics (other cases of mental disorder, without evidence of syphilis) are seen to be uniformly negative in all dilutions. These results show that the histological resemblances which in my first lecture were referred to as existing in respect of some cases of cerebral lues and cases of dementia paralytica have a serological counterpart.

I find that out of 19 cases of dementia paralytica in which 0·2 c.c. of pure cerebro-spinal fluid was used for the test, 11 gave a positive Wassermann and 8 a negative one; and out of 14 cases in which 1 c.c. was used, 10 gave a positive and 4 a negative reaction. Whereas the figures for other forms of insanity were, with 0·2 c.c., all negative in 13 cases; with 1 c.c., 5 positive out of 12; but as 3 of these were certainly (2) or possibly (1) cases of cerebro-spinal lues, only 2 out of 12 were positive in non-general paralytics and non-syphilitics with 1 c.c., as against 10 out of 14 in dementia paralytica.

The deductions I draw from the various experiences detailed above in respect to the employment of increasing strengths of cerebro-spinal fluid amboceptor are that a positive Wassermann with 0·2 c.c. of a 1 in 10 solution indicates dementia paralytica, but a negative reaction with any strength up to even 1 c.c. of the pure fluid does not exclude this disease if only once obtained; that negative reactions with large amounts of fluid are not infrequently obtained in, at any rate, the more quiescent periods of the disease, or in slowly progressive cases; that in such periods and cases the complement-deviation method cannot be relied on for diagnosis between dementia paralytica and cerebro-spinal lues, and this will, as heretofore, need to be made upon clinical grounds.

TABLE XXIV.—*Percentage-frequency of the Wassermann Reaction in Cases of Mental Disorder other than Dementia Paralytica.*

Authors.	No. of cases.	Serum.	Cerebro-spinal fluid.	Form of disorder.	Remarks.
Dean.	330	15·4		Idiocy and imbecility. 1910.	—
Kellner, Clemenz, Brückner, and Rautenberg.	216	7·4	0 (4 cases)	"	—
Lippmann.	—	9·0		"	—
"	—	13·2		"	—
Kreber.	262	21·4		"	—
Eichelberg and Pförtner.	150 and 19	5·2		"	—
Eichelberg.	150	12·0		"	
Thomson, Boas, Hjort, and Leschley.	2061	1·5		Mental deficiency.	—
Fraser and Watson.	89 and 105	45–48·5		Mental defective children. 1913.	—
"	204	46		Mental deficiency alone or with epilepsy, or epilepsy alone. 1913–1914.	—
Scott-Williamson.	22		0	Other than general paralysis. 1909.	—
Muirhead.	77	0	0	1910.	—
Morton.	30		0	Epilepsy and dementia præcox. 1911	—
Plaut (quoting various authors).	48		2	Epilepsy. 1909.	—
Kronfeld.	21		14·3	Arterio-sclerotic dementia. 1910.	—
"	35		11·0	Epilepsy. 1910.	
"	27		3·7	Acute and chronic alcoholism. 1910.	
"	77		1·3	Various "functional" psychoses. 1910.	
Karpas.	22	18	4·5	Epileptic insanity. 1912.	No history of syphilis.
McCampbell and Rowland.	15	0*	0	Various psychoses. 1910.	*Except in 2 with syphilis.
Roubinovitch and Levaditi.	15	20	0	Dementia præcox. 1909.	—

Frequency of a Positive Wassermann Reaction in Cases of Mental Disorder other than Dementia Paralytica.

In contrast with Table XX., I here give a table (Table XXIV.) embodying the results of the principal workers in respect to cases of mental disorder other than dementia paralytica. Respecting the large percentage of positive results obtained by Fraser and Watson in the serum, these authors give the explanation that no cases over 17 years of age appear in their series; but the percentage of positive results is, they say, stated by Dean to diminish rapidly after the sixteenth year. From the above summary it appears that a large number of observations has been made in respect of the serum in cases of idiocy, imbecility, and mental defect in general, but a comparatively small number in other psychoses. As regards the cerebro-spinal fluid, the number of all kinds examined is small. The positive results with the latter were obtained in psychoses associated with organic changes, a negligible figure being obtained in psychoses usually spoken of as "functional."

Summarising the results of Scölberg and myself with 0·1 c.c. (of 1 in 10) amboceptor as for the authors cited, the following results appear (Table XXV.).

TABLE XXV.—*Percentage-frequency of Positive Reactions in Cases of Mental Disorder other than Dementia Paralytica.*

—	No. of cases.	Serum.	C.S.F.	Form of disorder.
Schölberg and Goodall.	Serum, 17.	6·0		Idiocy and imbecility with epilepsy.
	C.S.F., 3.		0	
	Serum, 29.	3·5		Idiocy and imbecility.
	Serum, 22.	9·0		Insanity with epilepsy.
	C.S.F., 12.		0	
	Serum, 15.	0		
	C.S.F., 7.		0	Dementia præcox.
	Serum, 17.	0		
	C.S.F., 8.		0	Other psychoses.

Subsequent to the above cases we carried out a second series of observations upon cases of insanity other than dementia paralytica, using 0·2 c.c. of a dilution of 1 in 10 amboceptor as a control to our series of cases of dementia paralytica with the same amount. In Table XXVI. are given the two sets of tables—repeating the table relating to general paralytics—for comparison.

I have to observe that there were very few imbeciles amongst the cases of "other psychoses," and these few were all adult persons. For the rest, the most diverse kinds of insanity figure among these cases, including a few epileptic dements. From the figures cited from various authors (excluding those of Fraser and Watson, for the reasons

TABLE XXVI.—*Wassermann Reaction.*

With 0·2 c.c. (1 in 10).

Dementia paralytica (mostly advanced cases).	*Other psychoses.*
Sera: 39 cases.	Sera: 62 cases.
H. 0 in 22 = 56·41%	H. 0 in 7 = 11·29%
H. ret. ,, 7 = 17·94%	H. ret. ,, 2 = 3·22%
H. + ,, 10 = 25·64%	H. + ,, 53 = 85·48%
39 99·99%	62 99·99%
Cerebro-spinal fluid: 39 cases.	Cerebro-spinal fluid: 62 cases.
H. 0 in 12 = 30·77%	H. 0 in 1 = 1·61%
H. ret. ,, 8 = 20·51%	H. ret. ,, 1 = 1·61%
H. + ,, 19 = 48·71%	H. + ,, 60 = 96·77%
39 99·99%	62 99·99%

referred to), and from those of Schölberg and Goodall, it is seen that a positive Wassermann reaction occurs in the serum in idiocy and imbecility, alone or with epilepsy, in a fair proportion of cases, and also in a fair proportion of cases of insanity with epilepsy. But in respect to the "functional" psychoses, the results of two (Muirhead, McCampbell and Rowland) of the three observers cited agree with our first series, and show that a negative reaction occurs. The percentage of 11·29 of positive results with serum in our second (larger series) is no doubt partly due to the inclusion of some instances of adult imbecility and epileptic dementia. With reference to the comparative Table XXVI., it is worth noting that the cases of retarded hæmolysis with the serum are about five times more numerous in dementia paralytica than in other psychoses, which goes to strengthen the evidence for the presence of complement-deviating substance in the former serum. With the cerebro-spinal fluid the cases of retardation are about 13 times as numerous. Our fairly numerous examinations of the cerebro-spinal fluid in non-general paralytics supplement the scanty records available, and show the rarity of a positive Wassermann reaction in this fluid in these cases.

FURTHER EXAMINATION OF THE CEREBRO-SPINAL FLUID IN MENTAL DISORDERS; ESTIMATION OF PROTEINS, NITROGEN (IN PARTICULAR) AND OF CELLS.

I shall now deal with the information we possess with regard to the other two of the "4 reactions" of Nonne in the psychoses—viz., the protein reaction and the cell count. I may remind you that a useful quantitative test for protein for clinical purposes may be carried out by centrifugalising a definite quantity (2 c.c.) of the fluid to be tested and 1 c.c. of Esbach's reagent in graduated Nissl tubes, to hold which in the tubes of the centrifuge special "containers" are necessary. The mixture is centrifugalised for three-quarters of an hour. A deposit amounting to one to two graduations is normal, from two upwards abnormal. But the time appears to have come when we must abandon such rough-and-ready methods of estimation and adopt micro-chemical ones, which the chemist is now furnishing, and of such a rapid and comparatively simple kind that they can be used for clinical purposes. As to this I shall have more to say later. Undoubtedly the great majority of workers now employ a qualitative test, and principally the test with saturated ammonium sulphate, as recommended by Nonne and Apelt (a precipitate, as shown by opalescence, within three minutes—"Phase 1" of the Nonne-Apelt test). My large experience of this method enables me to endorse the statements of others as to its great reliability. In conformity with the course adopted in respect to the Wassermann test I here give the more important results published with the Nonne-Apelt method prior to stating my own experience. (Table XXVII.) If these percentage results be compared with those given by various writers in respect of the Wassermann test in the cerebro-spinal fluid, as recorded in Table XX., it is seen that the Nonne-Apelt protein test is more frequently positive in dementia paralytica than is the Wassermann test. The results obtained in my experience are as follows:—

TABLE XXVII.—*Results of the Nonne-Apelt Test in Dementia Paralytica.*

Author.	No. of cases.	Percentage-frequency of positive reaction.	Remarks.
		Per cent.	
Richter.	117	99·2	1910 (only 11 were weak reactions, of which 8 were stationary cases; 3 cases of tabo-paralysis.)
Wada and Matsumoto.	51	100·0	1909, including early cases.
Hönkl.	85	100·0	1909 or before.
Jachs.	40	82·5	1908 ,,
Kronfeld.	200 (of organic brain disease and "functional psychoses")	99·1 (in dem. par.)	1912.
Bundschuh.	54	100·0	1913.
Rosanoff and Wiseman.	75	90·7	1910. "Butyric" reaction.
Eichelberg.	1020 (G.P.I. and non-G.P.I.)	97·0 (in dem. par.)	1912.
Wolff.	30	100·0	1910.
Bisgaard.	110	98·0	1913.

TABLE XXVIII.—*Nonne-Apelt Test ("Phase 1" "Positive"). (Schölberg and Goodall.)*

Dementia Paralytica.

Number of times done, 147.

Positive	125	85·03 per cent.
Negative	22	14·96 ,,
	147	99·99 ,,

It will be seen that the figure from which our percentages are drawn compares favourably with the figures of most of the writers cited, theirs being lower; but with this test, as with the Wassermann, our percentage of positive results is lower than that of the writers cited. For this fact I invoke the explanation that our patients were in several instances in a quiescent phase of the disease when examined. Our experience bears out the conclusion arrived at by a comparison of the Nonne-Apelt and Wassermann tables of other observers, and shows that the former test is the more frequently positive in cases of undoubted dementia paralytica; for with the Nonne-Apelt we obtained 85 per cent. of positive results, with the Wassermann test, even when 0·6 c.c. of amboceptor 1 in 10 was employed, our positive results in the cerebro-spinal fluid of the same patients amounted to only 68·42 per cent., and with the serum only to 72 per cent. It has to be pointed out, however, that the Nonne-Apelt test percentages are based upon very many more instances than are those of the Wassermann reaction, and our recent experiences with the pure cerebro-spinal fluid, which I have detailed in Table XXVIII., show that some positive Wassermann results are missed if even 0·6 c.c. of 1 in 10 of the cerebro-spinal fluid is the highest amount taken. The very numerous "repeat-observations" of Schölberg and myself, in the same patient, show that the Nonne-Apelt is more frequently positive in a given, slowly progressive case than the Wassermann test. To illustrate this point I adduce the following typical instances from the tables in my possession:—

(W. T. M.) Wass. 0 three times; N. A. + same 3 occasions.
(E. J.) ,, ,, ,, ,,
(F. H.) ,, ,, ,, ,,
(W. G. F.) ,, ,, ,, ,,
(S. J. C. K.) Wass. 0·4 times, hæmolysis ret. twice; N. A. + 6 times.

And in all the cases strengths of cerebro-spinal fluid much exceeding the ordinary strength were employed for the Wassermann test.

As regards the Nonne-Apelt test during a remission of general paralysis, I find that of 15 occasions upon which the test was made in this state it was positive in 12, negative in 3. As far as these figures go, the protein test is much more reliable as indicating the continued existence of the disease than the Wassermann, for with the latter a positive result was obtained as often as a negative during a remission. Continuing the inquiry as to the validity of the Nonne-Apelt test, I have collected the results of various observers in respect of the frequency of occurrence of a positive reaction in "functional" psychoses, and psychoses associated with organic disease of the nervous system (and other than dementia paralytica). (Table XXIX.)

TABLE XXIX.—*Percentage-frequency of Positive Results with the Nonne-Apelt Test in Mental Disorders other than Dementia Paralytica.*

Author.	No. of cases.	Positive results.	Remarks.
		Per cent.	
Richter.	133	10·0	1910. Gave a weak reaction, and were mostly cases of organic changes; thus, cases of senile dementia or of alcoholism.
Eichelberg.	1020 (G.P. and non-G.P.I.)	80·0 (Non-G.P.I.)	Cases of lues cerebri.
Wada and Matsumoto.	15	6·6	1909. The one positive result weak, and later negative (an epileptic).
,,	6	33·0	Dementia præcox.
,,	11	100·0	Cases of lues cer.-spinalis.
Jachs.		37 5	1908. Cases of lues cer.-spinalis.
,,	30	13·3	Epileptics.
,,	18	16·6	Idiots.
,,	13	23·0	Chronic alcoholics.
,,	20	10·0	"Ordinary psychoses."
Kronfeld.	200 (organic brain disease and "functional" psychoses)	12·1 (Non-G.P.I.)	1912. ("Functional" psychoses.)
Karpus.	22	4 8	1912. Epileptic insanity.
Rosanoff and Wiseman.	333	10·8	1910. (Various psychoses. "Butyric" reaction.)
Redlich, Pötzl, and Hess.	17	0·0	1910. Epileptic.

A reference to the table shows that a positive reaction is obtained in quite an appreciable number of these conditions, even when cases of lues cerebri are excluded; whereas in similar psychoses the results recorded with the Wassermann reaction have been negative, if one excepts those of Karpus and Kronfeld (see Table XXIV.); but even theirs are on the whole less frequently positive than the Nonne-Apelt results. With reference to this point the results of Schölberg and myself are as follows:—

86 cases of various psychoses other than dementia paralytica, and unassociated with cerebro-spinal lues.	Nonne-Apelt test + in 9·30 per cent.
62 cases of various psychoses (the same cases as above).	Wassermann positive in the cerebro-spinal fluid in 1·61 per cent. when 0·2 c.c. of 1 in 10 amboceptor used, in 7 per cent. when up to 0:6 c.c. used (see Table XXII.).

Whilst, therefore, the Nonne-Apelt test is considerably more frequent in non-general paralytics than the Wassermann test when the latter is performed with the usual strength of amboceptor, there is but little difference between them when, as is frequently necessary for diagnostic purposes, the higher strength of amboceptor is employed.

To summarise in respect to the value of the Nonne-Apelt test: in undoubted dementia paralytica it is more often positive than the Wassermann test with the cerebro-spinal fluid; it is obtained more consistently throughout the course of the disease; it is more reliable as revealing the persistence of the disease in remissions. On the other hand, it is less reliable in diagnosis, occurring oftener in cases of insanity which are not cases of either dementia paralytica or cerebro-spinal lues.

Recently Dr. Stanford,[24] research chemist at the Cardiff Mental Hospital, has published results of a series of comparative studies upon the cerebro-spinal fluid in cases of dementia paralytica and of other forms of insanity (including insanity with epilepsy and senile and terminal dementia), these studies having hitherto been concerned with the density and the nitrogen-content of the fluid. In respect to density he finds that this is higher in dementia paralytica than in other conditions, with the exception of epilepsy with insanity. In four cases of the former disease in which the density figure was particularly high the patients were very near death; in two in which they were uncommonly low the disease was in remission. The results as a whole go to show that there is in this disease a steady, progressive, and abnormal destruction of cerebro-spinal tissue, a conclusion borne out by the observations which follow. As regards nitrogen-content, the method employed consists in the estimation of nitrogen, in hundredths of a milligramme, contained in 1 c.c. of cerebro-spinal fluid. In dementia paralytica the N number was between 20 and 30 in 15 out of 26 cases; of three cases in which it was below 20 two were in remission and one was in an early phase of the malady; of the remaining eight cases (above 30) seven were advanced, one was at the commencement of the disease. A striking instance is given in which the number was only 16·1 in remission, 23·7 on relapse. In various other kinds of insanity (imbecility, manic-depressive, dementia præcox, paranoia, confusional) the N number was never above 25 and only four times over 20 out of 17 tests made. So that a marked difference exists between the cases of dementia paralytica on the one hand, and other kinds of insanity on the other, if one excepts cases of senile and terminal dementia, in which the N number is also high. Increased density and higher N number commonly go together, but in some cases, especially in epileptics, this is not so, and low or moderate N numbers go with high density figure, which, as Dr. Stanford observes, points to the presence of abnormal quantities of other constituents (non-nitrogenous) in some cases. By the courtesy of Dr. Stanford I am able to avail myself of his N numbers in a series of cases of dementia paralytica, and another series of non-general paralytics. These I have set out in the following tables (Tables XXX. and XXXI.), in parallel columns, with the results of the Wassermann reaction as obtained with three strengths of amboceptor, with those of the protein test, and with the cell counts.

The chief impression gained from a survey of Table XXX. is that a failure to record the presence of the disease is—although not frequent—more frequent in the case of the Wassermann and the cell tests than in that of the protein and nitrogen tests. Thus, in the blood Wassermann is negative or (once) incomplete in 10 out of 30 instances in which 0·6 c.c. serum was employed, and likewise with respect to the cerebro-spinal fluid. The cell test was practically negative in 7 out of 31 instances. Whereas the protein test was negative only 3 times out of 34, and the nitrogen test 3 times out of 35 (taking 20 as the lowest correct N number). This comparison therefore bears out what has already been said as to the greater certainty of the protein test in known cases of dementia paralytica, and further demonstrates the accuracy of the nitrogen test as furnishing evidence of katabolism. From the experience gained in the comparative tests, I think it very probable that it will be found that a considerable nitrogen number exists when the protein test is merely faintly positive. It would be of much interest to perform these tests in those unusually complete remissions which are sometimes met with, and I believe more frequently in the private class of patient, from the points of view of their absolute and comparative utility. One would hope to find in the nitrogen test, with further experience, one means (and probably

TABLE XXX.—*Various Tests Compared: Dementia Paralytica.*

Case.	Approx. duration (years).	Serum H. + or 0 1 in 10.			Cerebro-spinal fluid H. + or 0 1 in 10.			Pure.			Nonne-Apelt. + or 0.	Nitrogen number. 100ths mg.	Cells per c.mm.	Remarks.
		0·2	0·4	0·6	0·2	0·4	0·6	0·2	0·4	1 c.c.				
D. L.	Advanced.	r.	0	0	0	0	0	—	—	—	+	23·0	28	Series of fits yesterday.
W. Y.	At least 1.	0	0	0	0	0	0	—	—	—	+	36·8	—	Quiescent.
T. G.	2	+	0	0	s.r.	0	0	—	—	—	+	32·8	23	Fair remission.
J. J.	2	0	0	0	0	0	0	—	—	—	+	31·3	54	Acute; died in 4 months.
	2	0	0	0	0	0	0	—	—	—	+	46·1	124	Acute; died in 2½ months.
C. H. B.	3	+	+	r.	+	+	+	—	—	—	0	15·0	5	Stationary.
		+	r.	0	+	s.r.	0	—	—	—	0	17·6	0	,,
	4	—	0	—	—	0	—	—	—	—	+	24·3	0	,,
C. T.	Several months.	0	0	0	0	0	0	—	—	—	+	24·0	47	Progressive.
S. K.	2¾	+	+	+	+	+	s.r.	—	—	—	0	24·9	40	Partial remission.
		+	0	0	r.	0	0	—	—	—	+	27·0	20	,, ,,
		+	+	+	+	+	r.	—	—	—	+	25·0	40	Stationary.
	3¾	+	+	0	+	+	v.s.r.	0	—	—	+	29·9	14	Advanced; progressive.
E. J.	3½	+	+	+	+	+	+	—	—	—	+	29·5	13	Mild remission.
E. L.	At least 1.	0	0	0	0	0	0	—	—	—	+	31·15	34	Third stage; progressive.
H. R.	Uncertain.	—	—	—	—	—	—	—	—	—	—	22·1	—	Partial remission.
	1 year later.	0	0	0	r.	0	0	—	—	—	+	19·8	14	Partial remission or stationary.
F. W. M.	7 months (least).	0	0	0	0	0	0	—	—	—	+	28·3	25	Advanced; progressive.
Le F.	2	0	0	0	+	0	0	—	—	—	+	18·5	32	Quiescent.
		+	+	+	+	+	—	—	—	—	+	20·7	4	,,
C. S.	18 months (least).	0	0	0	+	+	0	—	—	—	+	42·1	40	Advanced; progressive.
		+	+	+	+	r.	0	—	—	—	+	31·5	50	,, ,,
S.	Advanced.	0	0	0	+	.r.	0	—	—	—	+	41·5	19	,, ,,
H.	,,	0	0	0	+	0	0	—	—	—	+	21·0	80	,, ,,
W. B.	18 months (least).	+	r.	0	+	0	0	—	—	—	+	34·5	7	Active disease.
C.	20 months (least).	+	+	+	+	+	+	—	—	—	+	55·9	13	Seizures; died next day.
F. W.	Recent.	—	r.	—	—	r.	—	—	—	—	+	32·0	45	Early; progressive.
		r.	r.	0	0	+	0	—	—	—	+	43·0	72	,, ,,
F. H.	2½	—	0	—	—	0	—	—	—	—	+	23·3	2	Advanced; last stage.
J. W.	2½	0	0	0	+	r.	0	—	—	—	+	21·4	24	Partial remission.
F.	Advanced.	0	0	0	+	r.	0	—	—	—	+	31·2	—	Late in disease.
D. J. B.	,,	+	+	+	+	+	+	—	—	0	+	24·2	46	,, ,,
W. G. F.	,,	+	+	+	+	+	+	—	—	—	+	29·4	7	Partial remission.
		—	—	—	+	+	+	—	+	—	+	27·5	—	,, ,,
		+	+	+	+	+	+	—	—	+	+	24·6	20	Remission well sustained.

r. = Retarded. s.r. = Slightly retarded. v.s.r. = Very slightly retarded.

TABLE XXXI.—*Various Tests Compared: Different Kinds of Mental Disorder* (*Non-G.P.I.*).

Case.	Form of disorder.	Serum. H. + or 0. 1 in 10.			Cerebro-spinal fluid. H. + or 0. 1 in 10.			Nonne-Apelt. + or 0.	Nitrogen number. (100ths mg.)	Cells per c.mm	Remarks.
		0·2	0·4	0·6	0·2	0·4	0·6				
C. H.	Chronic delusional insanity.	+	+	+	+	+	+	0	16·0	0	—
E. J. C.	Dementia præcox.	+	+	+	+	+	+	0	22·4	3	—
M.	Delusional insanity.	+	+	0	+	+	+	0	24·0	0	—
R. E. J.	,, ,,	+	+	+	+	+	+	0	13·2	—	—
S.	Chronic mania.	+	+	+	+	+	+		16·2	0	—
F. M. M.	Congenital defective.	+	+	+	+	+	+	0	19·7	0	—
		—	—	—	—	—	—	0	15·7	0	—
C. J.	Imbecility.	+	+	+	+	v.s.r.	s.r.	0	15·6	0	—
J. R.	Secondary dementia.	+	v.s.r.	s.r.	+	+	+	0	13·3	—	—
G. A. J.	Dementia with paresis.	+	+	+	+	+	+	0	16·9	0	—
	(Alcohol).	—	+	—	—	+	—	—	16·6	—	Pure cerebro-spinal fluid 0·2 c.c. and 1 c.c. H = +
V.	Dementia præcox.	+	+	+	+	+	+	0	21·4	0	—
B.	Cerebro-spinal lues (dementia).	r.	0	0	+	+	+	+	36·3 (18/11/13)	9	H = 0 with 1 c.c. pure cerebro-spinal fluid. Died 2/12/13. (Diagnosis verified p.m.)
E. K.	,,	0	0	0	+	+	+	+	19·6 (18/11/13)	9	H = 0 with 1 c.c. pure cerebro-spinal fluid. 18/11/13. Discharged.
D. L.	Disseminated sclerosis (dementia).	+	+	+	+	+	+	0	20·6	—	—
J. M.	Dementia (senile).	+	+	+	+	+	+	0	18·7	0	Cardio-arterial disease. Died.
D. McG.	Epileptic dementia.	+	+	+	+	+	+	0	15·6	0	—
		—	—	—	—	—	—	0	16·4	0	
B. P.	Dementia præcox.	+	+	+	+	s. r.	s. r.	0	17·4	—	—
W. M. L.	Epilepsy with imbecility.	+	+	+	+	? s. r.	? s. r.	0	16·1	0	—
S. G.	Adolescent dementia.	+	+	+	+	+	+	—	16·3	0	—
		—	+	—	—	+	—	0	13·4	0	With pure cerebro-spinal fluid 0·2 and 1 c.c. H = +.
W. H.	Acute mania.	—	+	—	—	+	—	0	15·0	0	—
W. M. H.	Senile.	—	—	—	—	—	—	+	57·3	59	—

r. = Retarded. s.r. = Slightly retarded. v.s.r. = Very slightly retarded.

the most accurate) of ascertaining the existence, or the approach, or termination, of anabolic and katabolic processes.

Turning next to Table XXXI., in which the various tests are compared in the respect of cases of insanity, non-general paralytics, the general impression gained is that of a high degree of accuracy in respect of all the tests. The Nonne-Apelt results are correct in 100 per cent. of the cases; it is interesting to note that the only positive reactions occurred in the two instances of syphilis (but see the last case, senile mania, recorded after the above remarks were written). The nitrogen test is remarkably correct throughout, assuming that the upper limit in cases unknown to be associated with katabolic processes is 20, the only incongruous result being with the third instance, of delusional insanity. Its result in the two instances of cerebro-spinal lues is suggestive, the figure being very high in B., who died (December, 1913) after the test was made, and who was degenerating rapidly at the time, and low in that of E. K., who was in a much better condition physically, and who left (5/1/14) after the test was performed. The cell count was correct in practically 100 per cent. of cases, the number of cells in the first case (B) of lues being possibly lower than might have been expected.

Cell Content of the Cerebro-spinal Fluid in Dementia Paralytica and in other Forms of Mental Disorder.

In conformity with the method adopted in respect to the other tests I give here the results obtained by the principal observers (Tables XXXII. and XXXIII.).

TABLE XXXII.—*Increase of Cells in Cerebro-spinal Fluid in Dementia Paralytica.*

Author.	No. of cases.	Cell increase.	Remarks.
Henkl.	85	Increased in 100%	1909
Schoenbrunn.	—	,,	,,
Wada & Matsumoto.	51	Increased in 98%	,,
Wada & Matsumoto (from literature).	390	,, 91%	,,
Jachs.	40	15 to 161 per c.mm.	1908
Kronfeld.	200	Increased in 95% (G.P).	1912. "Organic brain disease or functional psychoses."
Rosanoff & Wiseman.	75	Increased in 88%	1910
Wolff.	30	,, 93%	,,
Bisgaard.	93	,, 90%	1913

From a *résumé* of the above table and the one following it appears that the cells in the cerebro-spinal fluid are increased in a rather smaller percentage of cases of dementia paralytica than obtains for the positive protein test, though the amount of the increase in particular cases is not stated. As regards psychoses other than dementia paralytica, leaving on one side cases of cerebro-spinal lues, it is seen that in epileptic insanity there is an increase of cells; the figures in respect to dementia præcox are too small to receive attention. The figures of Kronfeld, and of Rosanoff and Wiseman, are

TABLE XXXIII.—*Increase of Cells in Cerebro-spinal Fluid in Non-general Paralytics (other Psychoses or Organic Disease of the Cerebro-spinal Axis with Psychosis).*

Author.	No. of cases.	Cell increase.	Remarks.
Wada and Matsumoto.	64	Increased in 84%	1909. Cerebro-spinal lues.
,, ,,	97	,, 4%	1909. "Normal cases."
,, ,,	6	,, 33%	,, Dementia præcox.
,, ,,	15	,, 6·6%	,, Various psychoses. At second examination increase disappeared (one case an epileptic).
Voisin.	34	Increased in less than 14·0%	1910 Epileptics ("some" had increase after status).
Jachs.	8	17 to 62 per c.mm.	1908. Cerebro-spinal lues.
Kronfeld.	200	Increased in 1·9% (non-G.P.).	1912. "Organic brain disease and functional psychoses."
Karpus.	22	Increased in 18%	1912. Epileptic insanity.
Rosanoff and Wiseman.	333	,, 0·3%	1910. Various psychoses.

particularly instructive, since in all their cases a protein test was done contemporaneously. These show that whereas in psychoses other than dementia paralytica the protein test is positive in 12 per cent. and 10·8 per cent. of cases, the cells are increased in only 1·9 per cent. and 0·3 per cent. of the same, a result which points to the superior value of the cell count in diagnosis. Turning now to the observations of Schölberg and myself my examination gives the following result in respect to dementia paralytica. (Table XXXIV.)

TABLE XXXIV.

No. of Cells in Cerebro-spinal Fluid per c.mm.
Dementia Paralytica.

No. of times counted, 96.		Per cent.
Over 5 cells (Mostly very abundant).	79	82·29
Five or less	11	11·45
None	6	6·25
	96	99·99

These results accord well with those of the Nonne-Apelt test (which was positive in 85 per cent. in dementia paralytica); and as with that so with this test, a positive result is obtained more frequently than with the Wassermann test, although fewer cases were done with the last mentioned. The numerous "repeat" observations which were made justify the statement that, unlike the protein test, the cell count test is not more frequently positive in a given, slowly progressive case than the Wassermann test. As regards remissions: in 13 of 15 cases examined in remission the cell count was found to be abnormally high—that is, it did not diminish in association with the remission.

Our results in respect to the increase or otherwise of the cell count in psychoses other than dementia paralytica were as follows. These cases illustrated various psychoses, being the same cases as formed the material for the protein test; cases of cerebro-spinal lues are, as in that instance, excluded. (Table XXXV.)

TABLE XXXV.

Other Mental Disorders.

No. of times counted, 73.		Per cent.
Over 5 cells (Less abundant than in D.P.).	13	17·80
Five or less	16	21·93
None	44	60·27
	73	100·00

These figures are much above those of Kronfeld and of Rosanoff and Wiseman (1·9 per cent. and 0·3 per cent.), to which I have referred, and are practically the same as the figures of Karpas for epileptic insanity (18 per cent.), but our cases were mixed ones, and epileptic insanity furnished only a fair proportion, purely functional psychoses and secondary dementia furnishing proportional contingents.

Summarising my experience of the cell percentage test, a positive result is more often obtained in undoubted dementia paralytica than with the Wassermann test, and in a percentage only slightly less than that furnished by the protein test; it is not obtained more consistently throughout the disease than the Wassermann; it is more reliable than the latter in revealing the presence of the disease during a remission; it is considerably less reliable in diagnosis than either the Wassermann or the protein test, occurring in a much larger percentage of cases of insanity which are not cases of either dementia paralytica or cerebro-spinal lues.

Comparison of Results of the Tests.

The time at my disposal will not allow me to bring before you illustrations of the relationship between the protein and cell percentage tests on the one hand and clinical stages and phases of dementia paralytica on the other, as was done in the case of the Wassermann test; such illustrations are to be found in the tables incorporated by Schölberg and myself in our paper read before the recent International Congress of Medicine; therefore I must content myself with the statement, which I base upon personal experience, that the lack of correlation between the result of the test and the clinical condition which has been demonstrated in the last-mentioned case exists also in respect of the protein and cell percentage methods. At the most it can be said that, just as the Wassermann test tends to be feeble or negative in slowly progressing or stationary forms of the disease, so the other two tests tend to be feeble or negative in similar conditions. As to a parallelism between the results of the three tests (Nonne-Apelt, cell percentage, and Wassermann in the cerebro-spinal fluid), I find that all who deal with this point amongst the authorities I have cited are agreed that there is none such. Analysing the results of Schölberg and myself, I find that the three tests were made contemporaneously in each of 62 cases, in each instance 0·6 c.c. of the (1:10) patient's amboceptor being used for the Wassermann test. In 67·7 per cent. all three tests were positive. This indicates a considerable degree of parallelism, but, although the amount of amboceptor used was high, it is very probable from what has gone before that a higher percentage of positive Wassermann reactions would have resulted had pure cerebro-spinal fluid been used and an even closer agreement would have resulted. This result is not in keeping with the statements of other workers; nevertheless, it is based upon recorded tables of comparison, confirmed and amplified by further work since, whereas the other statements are not so supported. The accompanying table (Table XXXVI.) has, perhaps, the merit of novelty, and, at any rate, illustrates in an interesting manner the progressive weakening or diminution of the complement-deviating substance in the serum in different stages of syphilis. I have to thank Dr. Schölberg

TABLE XXXVI.—*Summary of Comparative Results of the Wassermann Reaction.*

A.—50 Cases of Secondary Syphilis.
Blood Serum.

0·1 c.c.	0·2 c.c.	0·4 c.c.	0·6 c.c.
50. H = 0 0. H = +	50. H = 0 0. H = +	50. H = 0 0. H = +	50. H = 0 0. H = +
Positive 100%	(*a*) 100%		(*a*) 100%

B.—Cases of Tertiary Syphilis.
Blood Serum.

0·1 c.c. (48 cases).	0·2 c.c. (100 cases).	0·4 c.c. (100 cases).	0·6 c.c. (75 cases).
40. H = 0 8. H = +	75. H = 0 25. H = +	86. H = 0 14. H = +	73. H = 0 2. H = +
Positive 83·3%	(*b*) 75%	86%	(*b*) 97·33%

C.—39 Cases of Dementia Paralytica
(at various stages, mostly advanced).

	0·2 c.c.	0·6 c.c.
Positive	(*c*) 56·41%	(*c*) 72% (estimated as explained in text).

for the summary of the cases of syphilis, which is from his records.

Polynucleosis in the Cerebro-spinal Fluid in Dementia Paralytica.

By the expression "increased cell count in the cerebro-spinal fluid" is meant for all practical purposes a lymphocytosis.

Pappenheim[25] has published observations which have an interesting bearing upon this matter. He argues that the hyperleucocytosis met with in the blood in dementia paralytica in connexion with seizures, and that found, according to him, in the cerebro-spinal fluid in the same, and in connexion with the febrile attacks of unknown origin which occur in this disease, are due to a common cause. The characteristic of the cell increase in the cerebro-spinal fluid at such times is, according to Pappenheim, a polynucleosis, as it is in the blood. The cause of this exacerbational polynucleosis he believes to be an increased production of toxin. He cites Villaret and Tixier (Comptes Rendus, 28/7/06) as having noted a similar polynucleosis in the cerebro-spinal fluid in two cases of tabes with exacerbation of symptoms. Bergl and Klausner[26] find frequently in florid syphilis a high percentage of polynuclear leucocytes in the cerebro-spinal fluid; in later, chronic conditions lymphocytes and plasma cells appear, polynucleosis returning with exacerbations. The only writers besides Pappenheim who appear to have noted a polynuclear increase in the cerebro-spinal fluid of general paralytics are Roubinovitch and Paillard[27] (at the time of a seizure), and Como and Xanthopoulos.[28] On the other hand, there are competent observers, such as O. Fischer[30] and Kafka (two others are mentioned by Kafka[29]), who either deny that there is a polynucleosis in this fluid in dementia paralytica in association with exacerbation or deny any connexion between these conditions, since they find polynucleosis without clinical change and exacerbations without polynucleosis. Any polynuclear increase in the liquor these writers ascribe simply to an increased local meningitis, and not at all to a sudden increase in toxin production. Furthermore, any transitional and accidental polynucleosis in the liquor is not associated with polynucleosis in the blood, such as I drew attention to in my third lecture. At my request my colleague, Dr. D. J. Jackson, examined between 80 and 90 samples of the cerebro-spinal fluid of general paralytics, in the Fuchs-Rosenthal counting chamber and in centrifugalised deposits, these samples being removed in remissions and during and after seizures and pyrexial attacks. His observations lend no support to Pappenheim's statements, for whether in remission or in exacerbation states the dominant cell was the small lymphocyte, accompanied by some large lymphocytes, and polynuclears were conspicuous by their absence.

Observations on Complement in Cerebro-spinal Fluid.

By a natural process of association one passes from the consideration of meningitis of a localised kind in dementia paralytica, to a matter of theoretical interest—namely, the question of the existence or absence of complement in the cerebro-spinal fluid in this disease. The presence of complement in this fluid has been ascribed to the existence of meningitis in greater or less degree. Margulies[31] states that cerebro-spinal fluid has normally no hæmolytic property, but that in acute meningitis it acquires such, and in marked degree, against sheep's blood corpuscles; it contains, in fact, immune body and complement, like the blood serum. The latter statement is perhaps based upon the work of Weil and Kafka. The change is ascribed to transfusion of serum, as a result of the greater permeability of the meningeal vessels. Ciuca[32] examining the cerebro-spinal fluid in 30 normal persons found alexine absent in all. It was also absent in pathological conditions without meningeal complications; thus, in infectious fevers, diseases of the kidney and lung, hemiplegia, gumma of the brain, and dementia paralytica (three cases). In tuberculous meningitis, however, it was also absent. In certain diseases in which the serum contained specific antibodies these also were absent from the cerebro-spinal fluid. Hauptmann[33] and Weil and Kafka[34] state that complement is absent from this fluid in dementia paralytica; the last mentioned further find it to be absent even when in rich amount in the blood, as it is in exceptional cases. But more recently Kafka[35] has modified this statement, finding complement to be present in traces in from 11 to 12 per cent. of cases of this disease, and in these there is usually marked meningeal infiltration, accompanied by high cell counts and albumin. The above statements appear difficult to reconcile with another assertion of Weil and Kafka,[36] that by their technique the permeability of the meninges was found to be about ten times greater than the normal in 97 per cent. of 24 general paralytics. In 23 non-general paralytics there was no increased permeability. But there would not appear to be sufficient evidence that the immune body and complement found in the cerebro-spinal fluid in some cases of dementia paralytica are derived from the blood. A statement by Justschenko[37] as to the varying hæmolytic power of the blood serum in the "organic" disorders—dementia paralytica and dementia præcox, on the one hand, and a "functional disorder, manic-depressive insanity, and normal persons, on the other, led Schölberg and me to test the hæmolytic property of the serum and of the cerebro-spinal fluid respectively, from cases of mental disorder, against sheep's blood corpuscles. We first employed the solutions recommended by the Russian writer—viz., 5 c.c. of a 2 per cent.

solution of serum and 0·2 c.c. of a 10 per cent. suspension of sheep's corpuscles. This mixture was placed in the incubator, shaken at the end of an hour, replaced, and removed at the close of two hours to the ice-chest, and the results read the following morning. According to the author quoted, the serum from the cases of "organic" psychoses mentioned usually gives hæmolysis, that of manic-depressive insanity, and of a normal person, scarcely any. The following results I have to record by this method.

Hæmolysis + or 0.

"Organic" Psychoses.		*"Functional" Psychoses.*	
E. L. Dementia paralytica	0	D. L. Mild mental defect	+ (6 times)
M. B. Dementia with epilepsy	+	B. P. Chronic mania ...	+
D. L. Disseminated sclerosis with dementia	+	C. J. Imbecile	+
C. J. Tabetic general paralysis of the insane	+	M. Delusional insanity	+
F. M. Dementia paralytica	ret.	H. Confusional ,,	0
C. S. ,, ,, ...	+	E. Melancholia	ret.
B. P. Dementia præcox (quiescent)...	0	L. M. Chronic mania ...	+
		C. W. Melancholia... ...	+
		J. M. Dementia (secy.)...	+

ret. = retardation. secy. = secondary.

So that the results are much alike in the two series. In a subsequent and more extensive series of observations, with a view to ascertaining the presence or absence of complement in the cerebro-spinal fluid in dementia paralytica, Schölberg and I proceeded as follows. To 1 c.c. of uninactivated serum 0·5 c.c. of a 5 per cent. suspension of sheep's corpuscles in normal saline was added, and further, undiluted complement from a guinea-pig, in an amount based upon the titre of the same complement, as estimated for the hæmolytic test in the Wassermann reactions, which were done contemporaneously, due allowance being made for the greater dilution of the complement in our special test and for the fact that it was pure. A control tube of the same serum without complement was also put up. Uninactivated cerebro-spinal fluid obtained from the same patient at the same time was used in like manner, but in this case 5 c.c. of the fluid was taken, and a proportionately greater amount of complement was used; the control tube without complement was, of course, prepared in this instance as with the serum. On each occasion a case of dementia paralytica was taken, and one of another kind of insanity (dementia præcox, imbecility, or milder degree of defect, secondary dementia). The general paralytics were in very pronounced phases of the disease. The tubes were treated as described above. Tables showing the results I am unable to reproduce for reasons of space. They show clearly the existence of hæmolytic substances in adequate amount in the "normal" serum (no complement added) in all but two cases of the non-general paralytics, and the like in the general paralytics. In respect to the cerebro-spinal fluid; 14 cases of insanity other than of general paralysis and 14 cases of general paralysis are dealt with. As regards the non-general paralytics there is absence of hæmolysis with the "normal" cerebro-spinal fluid in every case; from which it is to be inferred that complement or hæmolytic amboceptor, or both, are lacking in the cerebro-spinal fluid. The addition of hæmolytic serum (upon the basis of the titre ascertained for the Wassermann test) made no difference except in one case (hæmolysis); the subsequent addition of complement produced hæmolysis in all the other tubes. In 4 out of 14 tubes containing complement H = +, but in the remaining 10 H = slight or absent, showing that either insufficient complement had been used or that amboceptor was deficient, or showing both. The appearance of hæmolysis in 5 out of 8 cases, on adding amboceptor, shows that amboceptor was deficient in them; but in the remaining 3 hæmolysis was brought about on further addition of complement.

As regards the general paralytics (14 cases) there is absence of hæmolysis in all but two of the "normal" tubes, in which it occurred to a slight extent. The addition of hæmolytic serum made no difference except in one case, in which hæmolysis resulted. In the other cases hæmolysis was produced by subsequent addition of complement. In 8 out of the 14 complement-holding tubes H = +; in 4 others H = slight; in 2 others H was absent. In 5 of these last 6 (H slight or absent) hæmoloysis was rendered complete or brought about by adding amboceptor or amboceptor and complement.

The conclusion is that there is absence or deficiency of complement in the cerebro-spinal fluid in dementia paralytica, and there is sometimes deficiency, at any rate, of amboceptor. In these respects the fluid resembles that of the control, non-general paralytics. The above results go to support the statements of Hauptmann, and Weil and Kafka, to the effect that in dementia paralytica complement is absent from the cerebro-spinal fluid, and they go to show that this fluid, in the kinds of mental disease dealt with, resembles the fluid in normal persons in having no hæmolytic properties.

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BERI-BERI AT FALMOUTH.—At the last meeting of the Truro and Falmouth port sanitary authority Dr. G. E. Lanyon, the medical officer, stated that during the preceding three months about 700 steamers were "cleared out" of Falmouth, and they had had 14 cases of beri-beri. Dr. Lanyon added that the ships on which these cases occurred had only been on short voyages and the crews had good food, and on one ship a bullock was killed every week.

A CASE OF INTESTINAL OBSTRUCTION,

WITH SOME NOTES ON OPERATIVE TECHNIQUE.

By A. WEBB JONES, M.D. LOND., F.R.C.S. ENG.,
SURGEON AND GYNÆCOLOGIST TO THE EGYPTIAN GOVERNMENT HOSPITAL, ALEXANDRIA.

THE patient, a young Sudanese table servant, was admitted into the Egyptian Government Hospital, Alexandria, suffering from acute intestinal obstruction. On opening the abdomen through the right rectus the obstruction proved to be a coil of the lower ileum which was firmly glued down by lymph and lay in the true pelvis on the left side. On delivery the loop of intestine showed an advanced gangrenous condition. The bowel was therefore clamped, crushed, and divided with the actual cautery a few inches from its junction with the cæcum. The distal end was then invaginated with a purse-string Lembert suture, whilst the coil of gangrenous intestine was severed from its mesentery and drawn on until a portion of healthy bowel came out through the upper end of the abdominal wound. A drain was placed in the pelvis and the abdominal wound partially closed. The gangrenous gut was then severed, and finally a Paul's tube was fixed in the sound bowel immediately proximal to the gangrenous gut. The gut removed was examined by Professor Kartulis. It measured about a foot in length and, situated towards its distal end, presented a typical conical Meckel's diverticulum (also gangrenous).

I am unable to explain definitely the cause of the gangrene, but am inclined to think that the Meckel's diverticulum was accidental and had nothing to do with its causation. With regard to the technique of the operation the method seems to me to have some advantages, as there can be no leakage whatsoever of fæcal matter until after the abdomen is closed—indeed, in this case the flow through the Paul's tube was not established until the patient had regained his bed.

The patient did well, and about a month later the abdomen was opened through the left rectus. The bowel going to the artificial anus was identified by passing a bougie down the external orifice. It was then clamped and divided with cautery about six inches from its orifice. The two ends were invaginated, closed with a purse-string Lembert, and an anastomosis was then made between the proximal end and the transverse colon. Primary union was obtained and the patient made a rapid recovery. He now, however, has a small blind tube of ileum some six inches in length opening on to his abdomen. It secretes a little mucoid discharge, but disturbs him so little that he has refused further operative treatment and left the hospital.

As regards the problem of closing the small living intestinal test-tube, so to say, which remains, it occurred to me that one might have removed the mucous membrane forming the lining somewhat after the manner of an exaggerated Whitehead's pile operation. The inner surface of the gut thus freshened might have been expected to heal into a solid cord. This would have avoided opening the abdomen for a third time.

Although I imagine the case is far from unique I do not remember to have read of one which resembled it in every detail. For this reason, and more particularly because of the problem of how to treat a blind intestinal section, I have thought it worth recording. Perhaps someone of wider experience could say what is the usual fate of a small section of secluded gut opening on the abdominal wall when left to nature. My own case has gone to a remote village in Upper Egypt and is not likely to be heard of again. Similar conditions the result of animal experiments, I am told, are apt to close spontaneously.

Alexandria.

Medical Societies.

HUNTERIAN SOCIETY.—A clinical and pathological evening was held at the Barbers' Hall on Dec. 9th.—Dr. R. Fortescue Fox showed: 1. A case of Myxœdema in a man who had been under the care of Dr. Hertoghe, of Antwerp. The case illustrated rapid improvement under thyroid treatment. 2. A case of Fractured Ulna successfully united by means of a screw.—Dr. Theodore Thompson showed photographs of a man who had Fibro-sarcomata of the Back and Abdominal Wall, which had disappeared under X rays.—Mr. W. Girling Ball showed: 1. A Large Rhabdomyosarcoma removed from the abdomen of a child 3 months old. 2. A Humerus of a woman showing spontaneous fracture due to the presence of a thyroid metastasis about its centre. Microscopically the structure was that of fœtal thyroid. 3. A Gangrenous Foot removed from a soldier. 4. A Gangrenous Hand, also removed from a soldier. The gangrene was due to the severing of a large artery by a bullet. 5. A portion of a Spinal Column showing laminæ that had been shattered by a bullet.—Mr. R. L. Mackenzie Wallis showed X rays of Bullet Wounds and also Two Sovereigns that Mr. D'Arcy Power had extracted from the back of a soldier. These had been driven out of his belt into the flesh by a piece of shrapnel. So great had been the force that the lettering of one sovereign had stamped itself on the other.—Dr. A. C. Jordan showed a simple but accurate method of X ray localisation of bullets and other foreign bodies on the principle of parallax.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Sheffield on Nov. 20th, Dr. J. H. Willett (Liverpool), the President, being in the chair.—Professor J. B. Hellier (Leeds) exhibited a specimen of Cystic Sarcoma of the Uterus removed from a multipara aged 46. Menstruation had been irregular and infrequent for two years, and the patient had noticed a steadily growing lump in her abdomen for 14 months, until it reached the size of a four months pregnancy. The tumour was removed by supravaginal hysterectomy, and was then found to be converted into a multilocular cyst filled with yellowish serous fluid.—Dr. J. E. Gemmell (Liverpool) exhibited a specimen of Fibroids Complicating Pregnancy from a primipara aged 41. In this case it was considered safer for the patient to have the pregnant uterus removed than wait for Cæsarean section.—Dr. A. Stookes (Liverpool) exhibited a specimen of Fibroids Complicating Pregnancy from a primipara aged 30, five months pregnant. The fibroid had undergone cystic degeneration.—Mr. W. R. Favell (Sheffield) related a case of Labour Obstructed by Fibroid from a 3-para aged 37 years. The patient had been in labour for a week, during which time meconium was passed and fœtal movements ceased. The child was dead and presented by the breech. Panhysterectomy was performed.—Mr. Favell also read the notes of a case of Chorion Epithelioma from a patient aged 23, whose only pregnancy ended in a two months abortion in September, 1913. The uterus was removed a year later with mass behind it with a history like ectopic gestation. Later a small bleeding growth in the vagina was removed. The patient was now gaining weight.—Mr. Miles H. Phillips (Sheffield) described a case of Hydrometra, the size of a seven months pregnancy, removed from a multipara aged 56 years, who had been married 30 years. The uterus consisted of a thin-walled cyst lined with columnar cells. The cervix was blocked with fibrous tissue.—Mr. W. W. King (Sheffield) read notes of (1) a case of Concealed Accidental Hæmorrhage, with Hæmatoma in the Broad Ligament, treated by Cæsarean Hysterectomy; and (2) a case of Acute Hydramnios in a 9-para, aged 30, six months pregnant. The symptoms were rapid enlargement of the uterus, with great tenderness and abdominal pain. Delivery was followed by severe post partum hæmorrhage.

Reviews and Notices of Books.

The Life, Letters, and Labours of Francis Galton.

By KARL PEARSON. Vol. I. Birth, 1822, to Marriage, 1853. Cambridge: at the University Press. 1914. Pp. 246. Price 21*s.* net.

THIS book is not a "life" in the sense of Trevelyan's "Life of Macaulay," Lockhart's "Life of Scott," or Boswell's "Life of Johnson," and "the indolent reader" to whom Professor Pearson refers in his preface will certainly fight shy of it. But as a memorial to a loved and honoured teacher by a brilliant pupil it is in literal truth a masterpiece, containing an amount of solid work which is far from being adequately represented by the mere number of pages. As Professor Pearson implies in his preface, the work deals to a great extent with Charles Darwin as well as with Francis Galton; both were grandsons of Erasmus Darwin, both brought to the study of biology and all that it implies unwearied patience and unflagging industry. But in Galton's view heredity and ancestry played a more important part than they did in that of Darwin, at all events until 1869, when he was converted by reading Galton's "Hereditary Genius" to a belief that intellectual ability is hereditary. Darwin's letter to Galton and the latter's answer, both of extreme interest, are reproduced at p. 6 of the book.

Ancestry, therefore, being so important a constituent in a man's mental and physical qualities, Professor Pearson, as a whole-hearted follower of Galton, has set himself to show how his master was moulded by his ancestry—and what an ancestry it is! The pedigree plates contained in a pocket at the end of the book show that Galton, even in his immediate descent and its collaterals, drew strains from Darwins, Barclays, Sedleys, and Camerons, while the astounding Darwin pedigree (that marked E) goes back to the early Frankish kings, and contains the names of most European Royal families down to our own Elizabeth's time. In physique as a whole, says Professor Pearson, "Galton was in popular language, 'not a Darwin.' It is to the mental characters that we must turn for likeness." And he continues, "Francis Galton was physically and mentally a blend of many ancestral traits. Whether they were 'unit characters' or not concerns us but little here. What we do realise is that they were not the product of environment, whether of home, or school, or college. Few men have had more noteworthy ancestry in many lines than Francis Galton; that such ancestry should produce, not several, but one brother alone of this marked social value can puzzle only those who have not considered the wide range of possible variations which arise as we rotate the kaleidoscope of heredity. If on the average only one in four brothers of distinguished stock reaches first-class eminence, can we not only understand quite well how Charles Darwin and Francis Galton stand alone, but also appreciate how greatly the chances of perpetuating ability are reduced when men of able stocks leave in modern conditions but one or two children to preserve their name?" Herein, adds Professor Pearson, lies the key to Galton's demand that "eugenics" should pass as rapidly as possible from the laboratory to the market place.

After the end of Chapter II. comes that portion of the book with which Professor Pearson's "indolent reader" will probably commence—namely, the account of the childhood and boyhood of Francis Galton. It is interesting to note that even at the age of 8 years his schoolmistress reported most highly of him, but added, "the young gentleman is always found studying the abstruse sciences." We only wish that we had space to follow Francis Galton through his life so far as this first volume covers it, for as told in his letters and the illuminating comments of Professor Pearson it it of extraordinary interest, while the reproductions of portraits and sketches are most valuable. Many of the portraits are silhouettes, a kind of portrait which with all its deficiencies yet gives an admirable idea of its subjects. How characteristic is the silhouette portrait of Erasmus Darwin and his father, Dr. Erasmus Darwin, playing chess, which is reproduced at p. 14, or that of Erasmus Galton, Francis's elder brother, in his middy's uniform, at p. 69! So with regret we leave this enthralling work, a regret tempered by the knowledge that another volume of it is in store.

Diseases of the Rectum and Anus.

By P. LOCKHART MUMMERY, F.R.C.S. Eng. With 102 illustrations. London: Baillière, Tindall, and Cox. 1914. Pp. viii.–348. Price 7*s.* 6*d.* net.

THIS is a sound book and a practical one. These are its outstanding features. The author does not present any new or subversive hypotheses, with the possible exception of a suggestion thrown out that the propagation of carcinoma is due to our habit of burying our dead: he is presumably an advocate of cenotaphia. To say that the work is practical is meant for high praise. For the successful treatment of rectal disease a level head is more useful than an exuberant imagination. It is essentially a practical subject, and does not give much opening for theoretical disquisitions on German professorial lines.

It is pleasing to find a special chapter on antiseptic technique in relation to operations on the rectum, in which particular stress is laid on the necessity for taking as much care about asepsis in rectal operations as in those on other regions. To behave as if the rectum were necessarily a septic region, and ordinary precautions were therefore not called for, is wrong-headed; but we must confess that we have seen surgeons operating in general hospitals apparently under the influence of this idea. We agree with the author's criticisms here.

Mr. Mummery very rightly regards adequate drainage as one of the first essentials for success in rectal surgery. It is equally important in dealing with a fistula, a fissure, or piles by the operation of ligature, which he regards as the method of election. He describes, however, an operation for piles which he has designed and which is a slight modification of Laplace's operation, the only difference being that Laplace begins to cut away the pile at its upper extremity, Mr. Mummery at its lower. Now in both cases the cut edges of the mucous membrane are united by suture; and in both the rule of ensuring adequate drainage is overlooked, with the consequent risk of submucous infection. Neither of these operations is to be recommended. Mr. Mummery's operation for the treatment of prolapse has the merit of ingenuity and simplicity, but it would appear to hold out hopes of success only in cases where the prolapse is mainly one of the posterior rectal wall.

He mentions at length a condition which he calls "hæmorrhagic proctitis," but the evidence that this is a clinical entity and not a localised symptom of general disease is slight. There is a lucid account of the technique of the abdomino-perineal operation for excision of the rectum for carcinoma, but we looked in vain for any pronouncement on the question which vexes proctologists to-day—e.g., what class of case is suitable for this operation? Should it be attempted, for instance, in a fat but otherwise healthy man aged, say, 65? We should have liked to learn the author's answer to this particular question. The book ends with a short and vigorous chapter on foreign bodies in the rectum.

MISCELLANEOUS VOLUMES.

AT this season of the year a number of year-books, diaries, and so forth demand notice. Among the diaries issued by the firms of Messrs. John Walker and Messrs. Cassell and Co. will be found some suitable to various tastes and requirements. Both firms issue an insurance coupon with their diaries for £1000, which becomes valid on payment of a small registration fee. Both firms have some useful wall calendars and date-blocks.

A feature of Messrs. Walker's diaries is the easy interchangeability of the contents, either by an ingenious arrangement by which the whole contents of the diary slide into a metal grooved slip fixed centrally between the inside of the covers or by means of the well-known loose-leaved system, the leaves being held in place by a split-ring. In the case of the more expensive bindings—and these diaries can be had bound in velvet calf, real seal, morocco, and crocodile, making ideal and dainty presents—this is a distinct advantage, as the covers can be used over and over again, refills being supplied at very cheap rates, while the loose-leaved system makes it possible to insert or detach easily any leaf or leaves that may be required. In size the diaries are variously suitable for the vest, hip or breast pocket, and the rulings are for a week at an opening, one day, two days, or a week to a page, while the prices vary from 6*d.* to 8*s.*

Letts's Diaries (Messrs. Cassell and Co.) are issued with rulings similar to the foregoing and in sizes to suit all requirements and bindings to suit every taste, the prices ranging from 1*s.* upwards. In addition to the usual form of pocket diary this firm publishes a wide selection of scribbling diaries interleaved or not as required, with blotting paper. Convenient diary cases with pockets for stamps and various purposes, the diary which they are intended to contain being renewable as required, are obtainable. *Letts's Medical Diary*, *1915*, is a useful one, and contains much information of service to medical men. The diary shows a week to an opening, with space for recording the number of the ledger folio, patients' names, and visits made, while pages are provided for keeping a cash account, for professional engagements, and for the names and addresses of patients. According to the binding the prices vary from 2*s.* 6*d.* to 4*s.*, and from 4*s.* to 5*s.* 6*d.* respectively for the two sizes, which are ruled for either 54 or 108 patients.

The Doctor's Daily Register, comprising a combined visiting list and account book designed by Fred. W. Menzies, A.S.A.A., C.P.A. (U.S.A.) (Edinburgh and London: George Waterston and Sons, Limited), enables the medical man or his bookkeeper to record results in a simple and accurate manner. The system is self-checking. Records of visits having been made by the practitioner, the accounts may afterwards be written up, filed, and kept quite independently of him. The sheets of which this register is composed are fastened in a leather case 8 by 5½ inches by means of two small binding screws, and are ruled to deal with a month at each opening and to meet all possible requirements, including panel patient entries. A useful feature of the system is that not more than a month's supply of sheets need be carried at a time. A complete outfit with sheets for 12 months costs 10*s.* 6*d.*, and refills can be obtained for 3*s.* 4*d.* per 100 sheets. The system is a most convenient one.——*The Professional Pocket Book*, or daily and hourly engagement diary for 1915, according to the plan of the late Sir Julius Benedict (London: Rudall, Cart, and Co. Price 1*s.*), is intended principally for musical engagements, but the book presents features which may suit the requirements of other professions. The system provides for the entry of the hour as well as the day of an engagement. The diary consists of three small notebooks, each of which is ruled for four months, and one only of the books need be inserted between the covers of the diary at a time, thus saving bulk.——*The Live Stock Journal Almanac, 1915* (London: Vinton and Co., Limited. Price 1*s.*), contains many articles of interest to farmers and breeders of horses and cattle. The diary portion, which shows two pages to a month, includes a breeder's table.

Year-book of Scientific and Learned Societies of Great Britain and Ireland (London: Charles Griffin and Co. Pp. 376. Price 7*s.* 6*d.* net) is a record of the work done in science, literature, and art during the session 1913–1914, by numerous societies and Government institutions. It is compiled from official sources, and contains in classified order according to subjects lists of the societies, with their addresses, names of officers, dates of meetings, number of members, fees, publications, and so forth, together with the papers read before the societies during the session. The section devoted to medicine occupies pages 315 to 366; biology, which includes microscopy and anthropology, pages 143 to 188; and psychology, pages 278 to 282. Lists of papers on medicine and allied subjects will be found also under the headings of the Royal Society, the Royal Institution of Great Britain, and the British Association for the Advancement of Science, which come under the main heading of "Science Generally." A good index adds to the convenience of this useful publication, which is now in its thirty-first year.

Paton's List of Public Schools and Tutors, 1914 (London: J. and J. Paton, 143, Cannon-street, E.C. Pp. 1160. Price 2*s.*), which is compiled with a view to assisting parents in their choice of schools, is now in its seventeenth year. It contains a large amount of information concerning many of the best English schools for boys and girls. A list of scholarships and exhibitions, details regarding preparation for the Services, professions, and agricultural training for women, add to its value, as does also a map of the greater part of the British Isles, with the towns clearly indicated where public schools are situated. It may be pointed out that since the book was printed many school authorities have notified their willingness to reduce their fees for the children of officers or of those whose incomes have been considerably diminished owing to the war.

Low's Handbook to the Charities of London, 1914 (London: Sampson Low, Marston, and Co., Limited. Pp. 252. Price 1*s.* net), is too well known to need any commendation from us. The present issue (the seventy-ninth) gives the objects, date of formation, offices, income, expenditure, invested funds, bankers, treasurers, and secretaries of over 1200 charitable institutions, which are arranged in alphabetical order. The preface has for its theme this year the Shaftesbury Society and Ragged School Union, and a portrait of Sir John Kirk, J.P., the director of the society, forms the frontispiece.

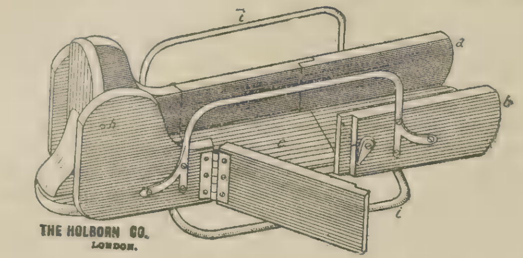
From Messrs. Adam and Charles Black we have received three reference books, *Who's Who, 1915* (Pp. 2376. Price 15*s.* net), the *Englishwoman's Year Book, 1915* (Pp. 448. Price 2*s.* 6*d.* net), and the *Writers' and Artists' Year Book, 1915* (Pp. 172. Price 1*s.* net). All are now too well known to need detailed description. In *Who's Who* the number of biographical notices of persons of distinction by social consideration, official position, or achievement in various walks of life is constantly enlarging, and the book has become an indispensable work of reference. The *Englishwoman's Year Book*, edited by G. E. MITTON, covers the field relating to women in regard to education, professions, social life, sport, and philanthropic effort. The table of "Records for Women" shows by concrete examples the appearance of women in the front rank of their selected fields of work, a result which is equally shown in the table of (women) experts. An exceedingly interesting and useful feature for students and women workers is the directory of boarding houses for women. It seems difficult to think of any field of activity for women concerning which much useful information cannot be obtained from this volume.——The title *Careers: A Guide to the Professions and Occupations of Educated Women and Girls* (London: The Women's Employment Publishing Company, Limited, 5, Princes-street, Cavendish-square, London, W. Fourth edition. Pp. 336. Price 1*s.* 6*d.*) sufficiently indicates the nature of a useful book which is issued in connexion with the Students' Careers Association and the Central Bureau for the Employment of Women. The articles on the profession of medicine are written by women doctors; the Viscountess Bryce furnishes an introduction to the book, and a foreword is supplied by Miss Mary G. Spencer.

New Inventions.

INTERRUPTED BOX AND LONG SPLINTS FOR COMPOUND FRACTURES OF THE LEG AND THIGH.

I WISH to draw attention to the following type of splint which I have devised and have employed with satisfaction for the past six years. I have not seen it described, and therefore put it before the profession in the hope that it may prove useful to others. The splint (Figs. 1 and 2) consists of a back splint with a foot-piece and two side splints. It is designed in such a way that when the catches are released and the hinged parts turned back the portion of the limb which requires dressing can be attended to with the minimum amount of movement to the broken ends of the bones, and consequently practically without any pain. *a* and *b* are the two side splints with hinge and catch shown. In the lower end of each of these a hole (*h*) is bored. Through these holes passes a transverse iron bar (*c*) which projects from the upper part of the foot-piece of the back splint. When the splints are fixed in position this bar helps to keep them steady. The interrupted portion of these splints between the hinge and the catch is bridged over by strong iron brackets (*i*). The back splint (*c*) is also interrupted and flanked with iron brackets and provided with hinge and catch similar to the side splints as shown in the diagram.

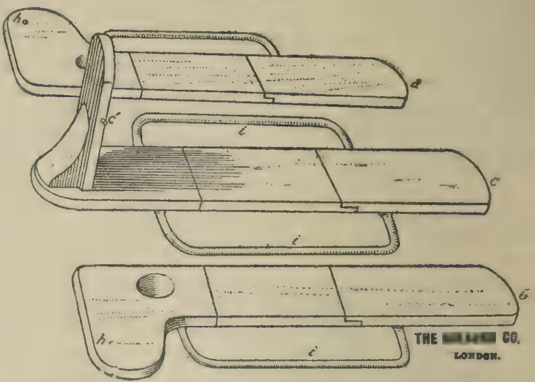
FIG. 1.



Interrupted box splint for compound fracture of the leg (*in situ*).

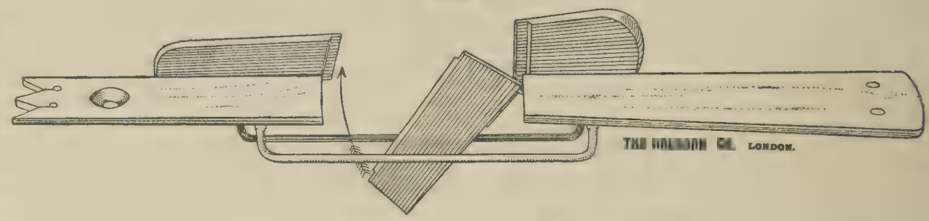
The interrupted long splint for compound fracture of the thigh (Figs. 3 and 4) is a long splint like Liston's, and should be of a similar length. The special feature is that a ledge sufficiently broad to support the limb is fixed at right angles to the lower border of this long splint, extending from the nates to the ankle. The broken limb rests on this and is prevented from "sagging" down at the point of fracture. The long side is interrupted at the site of the wound and the gap is spanned by means of iron hoops or brackets, one being horizontal while the other is vertical, as is shown in the diagram. The ledge is also similarly interrupted at the seat of the wound, but by means of a hinge attached to the side of the upper end it works in and out and bridges over the interruption in the ledge when it is fixed in position. The ends of this interrupted portion of the ledge and the piece which works in and out on the hinge are dovetailed and fit accurately by imbricating with each other when fixed in position. In the diagrams this hinged portion is shown open. The dovetailing is also indicated. These splints are only applicable to cases in which the wound lies at a level corresponding to the openings in them. This need not necessarily restrict their field of usefulness, which latter, to my mind, is fairly comprehensive inasmuch as most fractures occur in those regions of the leg and thigh where the "trap-door" arrangement has been shown. Like all other splints, these also are stocked by the makers in three sizes, so as to meet the requirement of any individual case.

FIG 2.



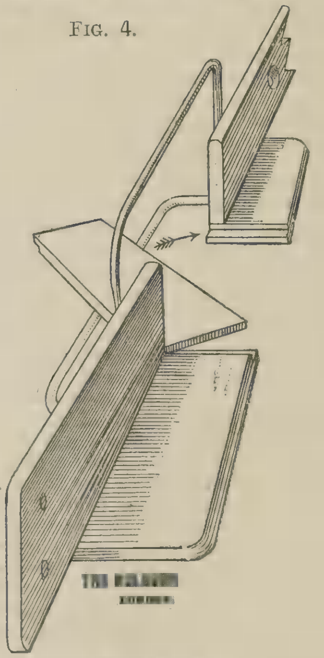
Same as Fig. 1 (in parts).

FIG. 3.



Interrupted long splint for compound fracture of the thigh.

FIG. 4.



Same as Fig. 3.

The splints are made lighter by the woodwork being fenestrated with holes bored through it. When replaced by perforated aluminium sheeting it is rendered both light as well as non-absorbent.

These splints are supplied by the Holborn Surgical Instrument Company, Limited, 26, Thavies Inn, London, E.C. The sketches have been drawn by Mr. James Murray, of Edinburgh, to whom my thanks are due.

HASSAN SUHRAWARDY,
F.R.C.S. Irel.
Medical College Hospital, Calcutta.

LEAGUE OF MERCY.—At the fifteenth annual meeting of the League of Mercy held in St. James's Palace on Dec. 17th under the presidency of Lord Farquhar, it was announced that with the present year the league had completed a collection of over a quarter of a million since its inception. This year £14,000 has been handed over to King Edward's Fund, and £2300 has been distributed among extra-metropolitan hospitals. The King and Queen through Mr. E. W. Wallington expressed their satisfaction on hearing that the league had had so successful a year in spite of difficulties, the amount collected, £18,482, exceeding last year's total. Princess Alexander of Teck made the presentations of the Order of Mercy.

THE LANCET.

LONDON: SATURDAY, DECEMBER 26, 1914.

THE ANNUS MEDICUS 1914.

MEDICINE.

IN dealing with the progress of medicine during the past 12 months attention will first be directed to a consideration of the advances which have been made in the prevention and treatment of infectious diseases.

Tuberculosis.

During the past year further efforts have been made to increase the adequacy of the means for the prevention and treatment of tuberculosis in London. Many schemes have been proposed and a vast amount of time earnestly devoted to a consideration of the methods which seem likely to yield the best results. An inquiry on the subject was instituted by the Charity Organisation Society, who issued a valuable and interesting report. This body has warmly supported from the first the adoption of what is known as the dispensary system, but the Society is convinced that no measure of attack upon the disease has any chance of success unless it begins and ends with the home; unless the patient is followed there, and both he and his surroundings are adequately dealt with, the provision of treatment in institutions or by other means is futile. The Society notes that the dispensary as an isolated unit is manifestly incomplete, and considers that every dispensary should work in close touch with a hospital, so that a consultant's opinion may be available and in order that patients may secure such special diagnosis and treatment as hospitals alone can provide. These are proposals which we entirely endorse. The public health committee presented to the London County Council a complete scheme for the treatment of tuberculosis amongst the uninsured population of the metropolis. The committee stated that it was anxious to encourage the provision of a complete network of dispensaries, and considered that the Council's efforts would be most usefully directed to linking up all the various existing agencies and others which might be created. For the purpose of selecting patients (uninsured) for residential treatment it was recommended that an honorary Tuberculosis Advisory Board should be formed, consisting of representatives from the general and special hospitals and the medical superintendents of certain sanatoriums and dispensaries. A full report on the results obtained by the graduated labour treatment of pulmonary tuberculosis was issued from the Brompton Hospital Sanatorium at Frimley. In order to assist in the diagnosis of tuberculosis researches have been made by several observers as to the value of the complement fixation test. The process is a complicated one, but in the hands of experts and with improved technique the test has made a marked advance.

Dysentery.—Vaccines in Prophylaxis and Treatment.

At the present time special interest attaches to inoculations not only against typhoid but also against paratyphoid fever. The paper published in our columns[1] by Dr. W. BROUGHTON-ALCOCK is therefore worthy of note. The various strains of the causative bacillus were investigated, and some of the results obtained were encouraging. Dr. BROUGHTON-ALCOCK avoided the use of the word vaccine, as he rightly contended that time alone could show the protective value of paratyphoid bacilli inoculations. Dr. F. M. SANDWITH, in delivering the Lettsomian lectures for 1914 before the Medical Society of London, called attention to a disease which has not only a world-wide interest but at the present time a special significance—namely, dysentery, a malady which has hitherto been an inseparable attendant of war in all climates and at all seasons of the year. Dr. SANDWITH gave an interesting résumé of existing knowledge of the disease combined with useful information derived from personal experience. Dealing first with the amœbic variety, he gave a good account of the entamœbæ of the human intestine, and in discussing treatment particularly dwelt on the employment of ipecacuanha and its alkaloids, although the general features suggested by environment were not lost sight of. The prophylactic measures which should be adopted against the bacillary variety were duly discussed, and Dr. SANDWITH remarked that means should be directed, not only against the contamination of drinking water, but also to see that raw vegetables were taken with caution, and he also pointed out that there is reason to believe that flies may act as carriers of bacilli from fæces to food. The discussion which took place in the Medical Section of the Royal Society of Medicine on vaccines from the standpoint of the physician elicited a number of opinions which especially served to emphasise the fact that vaccines, being potent agents capable of doing harm when injudiciously employed, should be given only with a sense of responsibility in conditions in which their use is definitely indicated and confirmed by bacteriological evidence. Amongst other interesting papers published during the year and bearing on the prevention of bacterial diseases was one by Sir ALMROTH E. WRIGHT and three collaborators, Dr. W. PARRY MORGAN, Dr. L. COLEBROOK, and Dr. R. W. DODGSON,[2] on prophylactic inoculation against pneumococcus infections; the conclusion reached was that the vaccines employed by these observers lessened the incidence and the mortality of pneumonia and other conditions produced by the pneumococcus among large collections of natives in the Rand mines, who were highly susceptible to its activity and under conditions favourable to the spread of the infection.

Disorders of the Heart.—Glycosuria.—Lectures Delivered.

Turning now to systemic diseases, researches of disorders of the heart have been extensively carried out, particularly with the aid of the electrocardiograph. Dr. THOMAS LEWIS, in delivering an address at the Pathological Section of the British Medical Association meeting at Aberdeen on the pathology of heart function, discussed some of the disorders of the heart's action which are disturbances of the regular sequence of chamber contraction. He discussed in particular auriculo-ventricular heart-block, premature contractions and allied disorders of the heart's rhythm, and the relation between extrasystolic and physiological beat. He also offered remarks on the rôle of the heart nerves in causing extrasystoles. He said that it had to be acknowledged that the nerves of the heart may play a very significant rôle in producing certain disorders of mechanism, and in attempting to define this rôle more distinctly he was of opinion that there are two questions to which answers may be returned at the present time. Has it been shown the abnormal nerve impulses playing upon a normal heart may be responsible for extrasystoles or the higher types of disorders? He thought that a negative answer must be returned. May nervous impulses playing upon a supersensitive or irritable organ provoke these curious contractions? To this question, Dr. LEWIS maintained, an affirmative answer might be given.

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[1] THE LANCET, Sept. 19th, 1914, p. 743.
[2] THE LANCET, Jan. 3rd (p. 1) and 10th (p. 87), 1914.

Amongst other subjects which have engrossed the attention of physicians during the past year has been glycosuria. Dr. NESTOR TIRARD in delivering the Bradshaw lecture made the suggestion that some cases of glycosuria depend upon a perversion of pancreatic secretion due to toxic absorption. Dr. W. HALE WHITE chose glycosuria as his subject in delivering an address at a meeting of the Leeds and West Riding Medico-Chirurgical Society. He gave an interesting account of the conditions under which glycosuria appeared, and offered some remarks in the treatment of the disease.

We published in our columns the chief lectures delivered during the year before the Royal College of Physicians of London and other learned bodies. Dr. J. A. ORMEROD delivered the Lumleian lectures, taking as his subject Some Modern Theories concerning Hysteria. Dr. EDWIN GOODALL's Croonian lectures on Problems in the Pathology of Mental Disorders are now appearing in our columns. Dr. FRANK SHUFFLEBOTHAM was the Milroy lecturer, his subject being the Hygienic Aspect of the Coal-mining Industry in the United Kingdom. Owing to the absence on military duty of Dr. GORDON M. HOLMES the Goulstonian lectures were not delivered. Sir R. DOUGLAS POWELL was the Harveian Orator, selecting as his theme Advances in Knowledge Regarding the Circulation and Attributes of the Blood since Harvey's Time.

SURGERY.

Surgery rarely advances *per saltum*, and therefore there is nothing surprising in the fact that the year now drawing to a close has not witnessed any very striking progress in either the theory or practice of surgery. Yet in surgery, as in military operation, there may be many slight advances in various parts of the front, although no striking progress has been made anywhere.

The Operative Treatment of Fractures.

The tendency towards a greater willingness to interfere by operation in fractures has now for some few years manifested itself, and many surgeons have plated fractures which only ten years ago would have been allowed to heal without operation. Yet there are not wanting indications that the zenith of this movement has been passed, and there can be little doubt that treatment by position and splints has replaced a part at least of the plating, which is even yet very strongly advocated by some brilliant surgeons. It is still insisted that if by means of the X rays it can be shown that the fragments are not exactly in position an operation is required; but those who hold this opinion seem to forget that it is the function of the limb that is of importance, while the mere appearance of the bones under X rays avails nothing. It may be urged that one merit of the use of plating is that the circulation of the limb is little interfered with, and stiffness is generally less marked, but the advantages may be more than offset by the fact that in no small proportion of the cases it is found necessary to remove the plate later. This retrogression of the practice of operating on fractures has become noticeable in America also. We would not for a moment wish to underrate the value of operations on fractures in suitable cases; they have a very definite field of utility, but the operation should be more restricted to those cases which need it.

Cholecystectomy v. *Cholecystotomy.*

A few years ago it was customary for the surgeon to treat gall-stones in the gall-bladder by incision of the gall-bladder and removal of the stones, the bladder being drained until the opening closed spontaneously. Sir JOHN BLAND-SUTTON was the first to advocate strongly the removal of the gall-bladder in all cases in which gall-stones were present in it. The arguments which he advanced in support of this opinion were these: In the first place, the absence of a gall-bladder in many animals is a strong indication that it has no very important function; it can hardly be that its presence or absence depends upon the nature of the food, for of two animals feeding naturally on the same food one may have a gall-bladder and the other not. The ox, with a diet consisting almost entirely of grass, possesses a gall-bladder; while the horse, with an identical diet, has no gall-bladder. It is also absent in the rhinoceros, the camel, and the elephant. That it is not essential in man is shown by the fact that those from whom the gall-bladder has been removed appear to suffer from no disability in any way, though too much stress must not be laid on this fact, for many times the spleen has been removed without the patient suffering in any way, and yet no one would venture to say that the spleen has no function. The second argument in favour of cholecystectomy for gall-stones is that there is much reason to think that the cholesterin, which is the main constituent of all gall-stones, is chiefly formed by the mucous membrane of the gall-bladder, and therefore the removal of the gall-bladder will diminish greatly the chance of any recurrence of the disease. There is yet a third reason in favour of the complete removal of the gall-bladder, and that is the fact that the occurrence of malignant disease of that viscus seems to be specially influenced by the presence of gall-stones; this is the greatest and most important argument of all, and in itself would be sufficient to warrant the routine removal of the gall-bladder. There are, however, cases in which when the abdomen is opened the gall-bladder is found surrounded by adhesions, and if the patient is old and feeble, the operation of cholecystectomy might be accompanied by more risk than the benefit accruing from it would be worth. The present position seems to be then that whenever an operation is performed for gall-stones it is always advisable to remove the gall-bladder, unless unfavourable conditions are present. Before, however, the surgeon removes the gall-bladder he must assure himself that the common bile-duct is pervious; if it is blocked by a stone the stone must be removed, but the duct may be closed by cicatricial tissue; in such a case it is clear that it will be necessary to make an anastomosis between the gall-bladder and the duodenum, so that any question of the removal of the gall-bladder cannot be considered.

Aseptic Surgery.

The epoch-making discoveries of Lord LISTER in the prevention of septic diseases needed a few years to be fully appreciated, but at last, it may be said, they were universally received; even then, however, many of those who carried out "antiseptic surgery" did so in an unintelligent manner, thinking that by antiseptic surgery was meant the observance of a certain routine and not the practical application of a principle. Nay, more, some appeared to imagine that antiseptic surgery meant nothing more than the lavish employment of carbolic acid in season and out of season, but without that attention to general cleanliness which had formed so important a part of what LISTER had taught.

It was only natural that there should have been a reaction against what was called "Listerism" when it was recognised that some of the methods employed by LISTER were unnecessary, when it was discovered that an abdominal section could heal without any sepsis, either in the peritoneum or in the abdominal wall, even though the carbolic spray had not been used. In the same way it came to be recognised that some other details of Listerian practice were unnecessary or could be usefully modified; these discoveries were thought by some to lessen the value of all LISTER'S teaching, though, indeed, no one was more ready to modify and improve his methods of practice than LISTER himself. He discarded the spray, devised new and less irritating antiseptics for the dressings he employed, and his results were equally good; but the critics of LISTER appeared always to forget these things. There is indeed much to be said in favour of some of the methods of aseptic surgery, and the excellent results which follow its practice show what may be done by its aid, but it appears often to be forgotten that aseptic surgery employs antiseptics. The skin of the patient and the hands of the surgeon both need sterilising so far as that is possible, and up to the present no other method has been devised for doing this than the use of antiseptic substances. Even the instruments need sterilising, and the employment of heat for this purpose instead of carbolic acid does not prevent the process from being antiseptic. The results obtained by LISTER himself have never been surpassed, and perfect results so far as relates to sepsis will always be attainable by any surgeon who will follow LISTER'S principles, though not necessarily by copying blindly the details of his practice.

OBSTETRICS AND GYNÆCOLOGY.

In the Arris and Gale lectures Dr. F. WOOD JONES[1] discussed the morphology of the external genitalia and brought forward interesting evidence in favour of the view that there are two main types of development and two main types of resulting external genitalia; that all mammals may be placed in the one group or the other; and that an examination of the adult genitalia will generally, and an examination of the embryonic stages will always, reveal definitely into which group a particular species falls.

A discussion on the need for research in antenatal pathology took place at the Obstetrical Section of the Royal Society of Medicine,[2] and a good deal of interest has been aroused by the publication of the scheme of the Local Government Board for the administration of maternity and child welfare centres, for which it has obtained a grant from Parliament of £12,000. A synopsis issued by the Board sets out the main outlines of the scheme, which includes antenatal, natal, and postnatal treatment of mothers and the welfare of the children from birth until the time they are entered on a school register. The scheme has many excellent features and by loyal coöperation between maternity centres, lying-in hospitals, and the local authorities should be productive of much good.

Investigations regarding Pregnancy.

The duration of pregnancy has more than a theoretical interest. Dr. BERRY HART,[3] from a biometric analysis of insemination labour curves, points out that in the statistics published with regard to cattle this method of analysis shows that the average duration of pregnancy is 283 days with a probable error of plus or minus six days. In the human subject the date of labour reckoned from the last day of menstruation should be 278 days, plus or minus seven days, but the most probable duration is 277·93, or 278·63 days.

It has been suggested recently that it might be possible to demonstrate the presence of the defensive ferments which ABDERHALDEN has shown to occur in the blood in pregnancy by means of inoculation on the analogy of the tuberculin reaction of VON PIRQUET. ENGELHORN and WINTZ[4] have carried out some experiments using a placental extract they term "placentin." By the injection of this substance hypodermically they claim that in the pregnant woman a positive reaction is obtained consisting of inflammatory swelling and redness of the inoculated areas with a light brown staining round them. A negative result is said to be obtained shortly after parturition. The results of their work are very interesting, but further investigations are required before any conclusion can be come to as to the value of this method.

In a paper on Nitrogen Metabolism during Pregnancy based upon a series of investigations on the Ammonia and Total Nitrogen Output in the Urine, read before the British Medical Association, Dr. H. LEITH MURRAY[5] commented upon the small amount of work done in the majority of lying-in hospitals in the examination of the urine. He was convinced of the great importance of these investigations, and demonstrated three simple quantitative tests which could be employed by a comparatively inexperienced worker in a clinical laboratory. It is becoming increasingly evident that, if our knowledge of the so-called toxæmia of pregnancy is to increase, a large amount of work must be done in this direction. Unfortunately, in this country there are very few lying-in institutions equipped either with the workers or the laboratories for them to work in, and until the pressing necessity for the provision of pathological laboratories in which investigations can be carried on is recognised in conjunction with clinical observations at the bedside, we can hope for very little progress in our knowledge.

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[1] THE LANCET, April 11th (p. 1017) and 18th (p. 1095), 1914.

[2] Proceedings of the Royal Society of Medicine, London, Obstetrical Section, vol. vii., p. 263, May, 1914.

[3] THE LANCET, Jan. 31st, 1914, p. 317.

[4] Münchener Medicinische Wochenschrift, March 31st, 1914; THE LANCET, April 18th, 1914, p. 1129.

[5] THE LANCET, August 22nd, 1914, p. 505.

Pubiotomy.—Treatment of Fibromyomata.

The merits and demerits of pubiotomy are still matters of dispute. In a discussion on the Management of Pregnancy and Labour in a Contracted Pelvis, at the British Medical Association meeting, JELLETT and HASTINGS TWEEDY[6] advocated pubiotomy, and FRANK, of Cologne, of symphysiotomy in what is often termed the second degree of contracted pelvis—viz., that in which the conjugate diameter measures from 2¾–3¼ inches. SHANNON, of Glasgow, pointed out that neither of the operations found much favour in Professor MUNRO KERR'S clinic, and KYNOCH and OLIPHANT NICHOLSON preferred rather the induction of premature labour. It is interesting to note the popularity of pubiotomy with certain members of the Dublin school, as so far it has not made much progress in England, and apparently is not very enthusiastically supported in Scotland.

The discussion on the treatment of fibromyomata of the uterus which took place at the same meeting was noteworthy for the almost unanimous condemnation by the different speakers of radiotherapy as a means of treating such tumours. At the same time none of them produced any evidence that they had had any practical experience of this method, so that their criticisms do not carry much weight. In view of the striking results which are said to have been obtained by workers on the continent we must wait for the published results of those gynæcologists in this country who are at present employing X rays in the treatment of fibroids before forming a final judgment on the subject. Several of the speakers were in favour of removing both ovaries with the uterus, and it is surprising to find what little importance they appear to attach to the mental effect which the knowledge that she had been "spayed" must have upon the ordinary woman.

Uterine Hæmorrhage.—Cancer of Uterus.

Uterine hæmorrhage formed the subject of a Hunterian lecture by Mr. BECKWITH WHITEHOUSE,[7] and an important contribution on the same subject was made to the Obstetrical Section of the Royal Society of Medicine by Professor BRIGGS and Dr. R. A. HENDRY. Mr. WHITEHOUSE suggests that three factors are concerned in the control of normal menstrual hæmorrhage—viz., the effect of uterine contractions, the action of a hormone or hormones producing capillary dilatation in utero, and the biochemical function of the endometrium. His lecture will well repay reading. Professor BRIGGS and Dr. HENDRY bring forward evidence to show that it is doubtful if there is any causal relationship between so-called fibrosis uteri and uterine hæmorrhage.

Interesting and important papers on the Treatment of Cancer of the Uterus have appeared during the past year by Dr. THOMAS WILSON,[8] who summarises his operative results, and Dr. J. F. PERCY,[9] who read before the Clinical Congress of Surgeons of North America a paper on the Treatment of Inoperable Carcinoma by the Application of Heat. The basic idea of this treatment, which is carried out by means of an electrical heating iron and water cooled speculum, is not cauterisation but the production and dissemination of heat in the gross primary mass of cancer.

OPHTHALMOLOGY.

An effect of the war has been to prevent the meeting of the Twelfth International Congress of Ophthalmology, which should have met at Petrograd in August, and to stop the flow of ophthalmic journals and literature from practically the whole of the Continent. The loss due to the failure of the congress is limited to the discussions, for the original papers have been printed and distributed to the members. Amongst them the report on the etiology of trachoma by Professor AXENFELD forms a volume of 200 pages, and is a very valuable contribution. As might be expected, there are many other papers on trachoma, a subject likely to be full of interest to our Russian colleagues. Otherwise the papers are rather disappointing, and English contributors are conspicuous by their paucity, Lieutenant-Colonel R. H. ELLIOT and Dr. KARL GROSSMANN alone appearing in the list. The former deals with his trephining operation for glaucoma, a subject which he has repeatedly discussed during the past year elsewhere, notably at the Congress of American Surgeons in London. This operation has also been exhaustively discussed by many other writers, English, American, and German, and whilst its great utility is freely acknowledged, some considerable drawbacks, such as late infection, have come to light. It still, however, holds its own as the operation of election in chronic glaucoma, though opinions differ as to its use in acute glaucoma.

The reports of the British and American Ophthalmological Societies for this year are particularly noteworthy, and contain some very admirable communications. The second meeting of the British Society under the new régime as an annual congress was a great success. Professor UHTHOFF'S Bowman Lecture on ophthalmic experiences and considerations on the surgery of cerebral tumours and tower skull was excellent and full of material of equal value to physicians, especially neurologists, general surgeons, and ophthalmologists. It serves to remind us now of the disastrous blow which Germany has struck against international science, a blow from which it will not recover for many years. The President, Mr. RICHARDSON CROSS'S address was a review of the history of the society, with many discursive remarks of much interest. The discussion on post-operative complications of cataract extractions was unusually good and merits special consideration. It was opened by Mr. E. TREACHER COLLINS, who dealt with the anatomical and pathological aspects of the question, illustrating his remarks by a valuable series of photographs. Lieutenant-Colonel H. HERBERT dealt with the clinical aspects; Mr. S. H. BROWNING, bacteriologist to Moorfields Eye Hospital, with the bacteriology; and Mr. C. KILLICK with his own experiences. The ensuing discussion elicited many important observations from Professor LANDOLT, Professor STRAUB, Lieutenant-Colonel ELLIOT, and others. Amongst the many good papers read at the meeting the following deserve special mention: Flat Sarcoma of the Choroid, by Mr. R. AFFLECK GREEVES and Dr. GORDON HOLMES; Homonymous Hemianopsia without other Evidence of Organic Disease, by Mr. F. RICHARDSON CROSS; Optic Neuritis and Myelitis, by Mr. CHARLES GOULDEN; Papillœdema in Disseminated Sclerosis, by Mr. LESLIE PATON; and Diseases of the Eye in Animals, by Mr. M. S. MAYOU.

The American Ophthalmological Society also record some papers of outstanding merit. We may mention particularly those on Sclero-corneal Trephining, by Dr. A. QUACKENBOSS and Dr. MYLES STANDISH; Extractions of Cataract in the Capsule, by Dr. ARNOLD KNAPP; Cranial Deformity associated with Ocular Changes, by Dr. T. B. HOLLOWAY; the Pathology of the Corneal Section, by Dr. F. TOOKE; and Psammosarcoma of the Orbit, by Dr. G. E. DE SCHWEINITZ. Dr. H. F. HANSELL and Dr. C. E. G. SHANNON re-advocate preliminary capsulotomy in the operation for the extraction of immature cataract, a procedure likely to find little favour with most ophthalmologists. It may be noted that Lieutenant-Colonel HENRY SMITH'S intracapsular extraction, which has never been adopted in this country, appears to be losing support in the United States, where it had warm advocates.

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[6] THE LANCET, August 22nd, 1914, p. 503.
[7] THE LANCET, March 28th (p. 877) and April 4th (p. 951), 1914.
[8] THE LANCET, August 1st, 1914, p. 318.
[9] THE LANCET, August 1st, 1914, p. 309.

The American Ophthalmological Society has thoroughly discussed the question of instituting a diploma in ophthalmology. If it be admitted that such a diploma is desirable—a moot point—it would be difficult to devise a better scheme than that set forth in the society's report. Special stress may be laid upon the recommendation that *two years* shall be devoted to the course. We believe that this far exceeds the time demanded by the Oxford authorities for their diploma, but most ophthalmologists will agree that it is not too long, and that the examination should be of such a searching character, both in the scientific foundations and the clinical and practical details, as shall ensure a *cachet* which is no mere sinecure.

The contributions to the Ophthalmological Section of the Royal Society of Medicine have been above the average, but as they have already been reported in abstract in THE LANCET it is unnecessary to refer to them in detail. Special attention may be drawn to the very instructive discussion on nystagmus by this section combined with the Neurological Section, and to that on the use of salvarsan in ophthalmic practice.

The *Royal London Ophthalmic Hospital Reports* are now edited by Mr. J. HERBERT PARSONS in place of Mr. WILLIAM LANG, who has been appointed a consulting surgeon to the hospital. It still publishes only original communications, and these are well up to the average. The papers by the late Mr. E. NETTLESHIP and by Mr. C. H. USHER on heredity are important not only to ophthalmologists, but to scientists in general. It may be mentioned that this journal does not receive the support from ophthalmologists which it merits.

There are two subjects of ophthalmic interest which are occupying the attention of Departmental Committees of the Home Office and Board of Education respectively. That of the Home Office is considering the lighting of factories, and has been engaged in a large amount of arduous spade-work in collecting data. That of the Board of Education is dealing with "blindness" as a disablement meriting pecuniary assistance. One of its duties will be to determine the nature and amount of the deprivation of the visual faculty which entails loss of wage-earning capacity.

NEUROLOGY.

If there has been, perhaps, no outstanding neurological contribution during the year, this branch of medicine, nevertheless, continues to be the object of research of an ever-increasing number of investigators.

Poliomyelitis has not, apparently, been quite so prevalent this year as last year. Much experimental work, however, has been done on the disease. The virus has been shown not to pass readily from the blood to the cerebro-spinal fluid, *viâ* the choroid plexus, unless the latter is injured. If the virus fails to reach the central nervous system it is destroyed in the body. It has been established, also, that in its transit the virus can be neutralised by intraspinous injection of immune serum, and paralysis, experimentally at least, may thus be averted (FLEXNER and AMOSS).

The problem of syphilis of the nervous system and its treatment bulks more largely than ever in the literature. The gist of numerous contributions on the question of the value of treatment by intraspinous salvarsanised serum may be given as follows: very fair results have been obtained in cerebro-spinal syphilis, in tabes the method is less useful, while in general paralysis its value is problematical. Further investigation is required before importance can be attached to the intraventricular route (OPPENHEIM, LEGENDRE, PILSBURY, AYER, RIGGS and HAMMES, STEWART, CAMPBELL, BALLANCE, and others).

In the matter of diagnosis continued attention has been paid to the cerebro-spinal fluid. The cell count often gives warning of a meningeal affection earlier than the Wassermann reaction, while, after treatment, it also often gives the earliest indication of improvement. The substance which produces the pleocytosis is distinct from the Wassermann substance (DONALD, MCINTOSH, FILDES, HEAD, and FEARNSIDES). Lange's colloidal gold reaction in the cerebro-spinal fluid is said to be a more delicate test for syphilis than either the Wassermann reaction or the cell count (LEE and HINTON).

A vast amount of research has centred on the relations of the ductless glands to the nervous system. It is now thought that many of the symptoms associated with lesions of the hypophysis are in reality due to involvement of nerve tissue in the neighbouring tuber cinereum and its vicinity (CAMUS and ROUSSY). By experimental testing of lipoids obtained from various glands more definite results are procured than by the inexact methods of extirpation (ISCOVESCO). There seems to be a definite relation between the adrenals and the lymphatic system (CROWE and WISLOCKI). Myasthenia gravis is in all probability a disease of the ductless glands (STERN).

The sympathetic system has been the object of prolonged researches. Much attention has been given to the oculo-cardiac reflex. In many persons a normal slowing of the radial pulse by 5 or 6 beats a minute occurs when the eyeballs are pressed back into the orbits (ASCHNER). This is the positive reflex; if tachycardia results the reflex is inverted. The anatomical path is by the fifth nerve, medulla, and vagus. The reflex is of considerable physiological interest, and probably of clinical importance, as giving an indication of the state of tonus of the autonomic system. The reflex is abolished after injection of atropine. Respiratory phenomena may also be produced by ocular pressure. In some cases the heart can be stopped. The reflex is exaggerated in epilepsy. It is often abolished in syphilis. It is almost always lost in paralysis agitans. In yawning, sneezing, and obstinate hiccough ocular compression has a definitely regulating effect (LOEPER and WEIL, LESIEUR, VERNET and PETZETAKIS, MONGEOT, DUFOUR and LEGRAS, and others).

ELECTROTHERAPEUTICS AND RADIOLOGY.

The subject of electrotherapeutics seems to have been undergoing a period of transition during recent years, the effects of which can now be traced with some accuracy. This has been brought about by the revival of cataphoresis, or ionic medication as it is now called. The study of this method has helped us in no small degree to realise that the effects of electricity on living tissues are either thermic or ionic. Recognition of this has led to a better understanding and more scientific methods. Of ionic medication we have heard much during recent years, and it deserves the position it has attained in therapeutics. The thermic effects of electricity are best exemplified in the use of low-tension high-frequency currents—diathermy. This is the only means at present known of raising the temperature of the subcutaneous tissues, and the effects are being carefully studied. A series of articles appearing in the *Archives of the Roentgen Ray*, by Dr. E. P. CUMBERBATCH,[1] throws a considerable light on this interesting subject. LEDUC[2] has shown that the application of the constant current to the brain is not only a safe procedure but one that has great therapeutic possibilities.

Few branches of medicine have been more profoundly influenced by the outbreak of the present war than that of X ray diagnosis. The study of the application of the X ray in the elucidation of internal disorders has given way to that of the effects of projectiles and their localisation. What used to be a very occasional feature of civil practice has suddenly become one of the first importance. Shrapnel wounds form the greater number, and owing to the dirt carried in with the fragments such wounds are almost invariably septic; thus the prompt localisation and removal of the fragments are needed, and prompt removal depends on accurate localisation. We are indebted to Sir J. MACKENZIE DAVIDSON for very accurate methods of doing this, and articles by other writers are to be found in most of the medical papers.[3] A very simple and expeditious method has been worked out by HAMPSON,[4] and an X ray table is now available with which this method can be carried out with convenience, accuracy, and rapidity.

The most important novelty brought out is a new form of X ray tube, due to Dr. COOLIDGE of America.[5] The essential feature is that it is possible to adjust it for any desired degree of radiation or current ever likely to be required, and it will remain in exactly the same condition more or less indefinitely. It promises to be a most important advance in radiology. As regards the use of the X rays and radium in therapeutics there is nothing very new to report. The present position of radium therapeutics can be best appreciated in the last report of the Radium Institute.[6] Important developments have been made, but as this report points out, we are scarcely any, if at all, nearer a cure of inoperable cases of malignant disease.

The use of the X rays in therapeutics continues unabated and even increases. The absence of a perfect method of measurement is a drawback, but to the experienced radiologist this is not so serious as it might appear. The use of the rays in the treatment of certain cases of uterine fibroids is meeting with considerable favour, but some time must yet elapse before we are in a position to estimate with any accuracy the value of the method.

DERMATOLOGY.

Pellagra is no new disease, for it was first described 150 years ago by Casal, and it has been widely known for many years, especially in Italy; but its importance as regards this country is of very modern origin, for it has not been recognised in the British Isles until the early years of this century. It is a general disease, but the digestive, the nervous, and the cutaneous systems are most involved; and the affection is of especial interest to dermatologists, as the skin manifestations appear early and may materially assist in diagnosis; in fact, Caszellani has suggested in doubtful cases placing the patient in the sunshine to evoke the rash. The disease is probably more common here than was thought, and cases have been found in asylums the origin of whose mental condition had been quite unsuspected. As to its etiology we are in much doubt; not so long ago it was almost universally accepted that it resulted from maize, but recent researches have thrown great doubt on this view of its origin, and opinion seems to be tending to the view that it is microbic in origin, the organism being perhaps ultramicroscopic. As dermatologists will generally have the opportunity of seeing cases of pellagra in a comparatively early stage, it is important that they should be in a position to recognise it readily, for any treatment to be effective must be early. The early erythema, the eczematous condition which follows, and the roughened pigmented condition which results are generally easily recognisable if the dermatologist is alive to the possibility of the occurrence of pellagra.

An event of no little importance during the year was the discussion on mycosis fungoides which was held in the Dermatological Section of the Royal Society of Medicine in May and June. A large number of the members of the section spoke, and divers views were enunciated. Nothing which was of general acceptance was elicited as to the etiology, but several speakers expressed the opinion that it was parasitic. Various analogies to other diseases were suggested, but the general opinion seemed to be that it was a disease *sui generis*. The histology was shown to be of extreme value in diagnosis in obscure cases. As to the treatment, while all agreed that the X rays were of great value, most of those present had never seen any complete and permanent cure.

TROPICAL AND EXOTIC DISEASES.

The closing year has witnessed further advances in our knowledge of tropical and exotic diseases. As each year passes the number of investigators and observers increases in this branch of medicine, so that the combined efforts becomes annually greater in the unravelling of the mysteries associated with the causation and prevention of these serious maladies. In other lands beside our own schools are being established for instruction in tropical medicine, so that it is comparatively rare nowadays to meet in the tropics with a newly arrived practitioner who has not received some sort of special training as regards the diseases peculiar to warm climates. Such trained men are perfectly capable of adding much to the general stock of knowledge respecting tropical and exotic diseases. Great advances may therefore be anticipated in the near future.

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[1] Archives of the Roentgen Ray, July, 1914, et seq.

[2] Ibid, September, 1914.

[3] THE LANCET, Nov. 28th, 1914.

[4] Archives of the Roentgen Ray, November, 1914.

[5] Ibid., March, 1914.

[6] THE LANCET, May 23rd, 1914.

The London School of Tropical Medicine, with aid from the Board of Education and from Mr. Austen Chamberlain's Fund, has been enabled to commence a systematic course of instruction in tropical sanitation and hygiene, a most important addition to the curriculum of the school, and one that is likely to produce far-reaching results in our colonies and dependencies, where the application of the principles of sanitary science is quite as necessary as it is at home, but where it has not hitherto, in our opinion, received sufficient attention. Early in the year this school despatched an expedition to the Far East, comprising Dr. R. T. LEIPER, Surgeon E. L. ATKINSON, R.N., and Mr. CHERRY-GARRARD, to study the mode of spread of trematode disease, particularly bilharziasias. The expedition landed at Shanghai and proceeded up the Yangtse river into Central China. On the homeward journey the expedition proposed to visit Sumatra to inquire into the ravages caused there by ankylostomiasis in certain tea and rubber plantations. The cost of this expedition was to be borne partly by the Colonial Office and partly by the United States Rubber Company. In the early summer of 1914 it was decided by the Liverpool School of Tropical Medicine to establish a permanent research laboratory on the West Coast of Africa, and Sierra Leone was chosen as a suitable centre from which expeditions might be despatched from time to time to other regions in tropical Africa. In November Dr. WARRINGTON YORKE, the Walter Myers professor of parasitology in the University of Liverpool, and Dr. B. BLACKLOCK, director of the Runcorn Research Laboratory, left this country for Sierra Leone to investigate the biting insects which are associated with tropical diseases in that part of the Dark Continent, and also to report upon a suitable site for the proposed "Sir Alfred Jones Laboratory" in Sierra Leone.

In 1914 a number of valuable papers were read before the London Society of Tropical Medicine and Hygiene, and many members from all parts of the world at one or another time have taken part in the discussions. The new president of this society, Sir RICHARD HAVELOCK CHARLES, G.C.V.O., is worthily maintaining the high standard of efficiency set by his three distinguished predecessors—namely, Sir PATRICK MANSON, Sir RONALD ROSS, and Sir WILLIAM LEISHMAN.

Tropical and Exotic Diseases in India.

In India, which by itself constitutes a wide field for observation and research in tropical and exotic diseases, progress continued to be made during the year, evidence of which is to be found in the establishment of a new school of tropical medicine in Calcutta. The foundation-stone was laid in February by Lord CARMICHAEL, Governor of Bengal; the cost of the buildings is estimated at 11½ lakhs of rupees (£76,667), half of which is being contributed by the Indian Government. A considerable amount of money has also been raised by private subscription through the efforts of Lieutenant-Colonel Sir LEONARD ROGERS, I.M.S., who acts as honorary secretary to the endowment fund. It is expected that this school will commence operations next summer, and diplomas in tropical medicine will be granted after examination. There will be a full staff of professors giving their whole time to the duties. A number of researches are being carried out in India in the various laboratories at Kasauli, Parel, Madras, and Coonoor, as well as in the Imperial Bacteriological Laboratory at Muktesar, which is devoted to the study of epizootics. We are glad to learn that the Director-General of the Indian Medical Service, Sir C. PARDEY LUKIS, K.C.S.I., whose tenure of office would have in ordinary circumstances ceased at the end of 1914, has had his term extended to the end of 1916. This extension is the more important since the Government of India has entered of late upon a progressive sanitary policy which is likely to have a far-reaching influence upon the health of the natives of India; it is imperative, therefore, that there should be no break in the direction of the operations now being carried out by the Indian Medical Service for this purpose.

Cholera.

Major E. D. W. GREIG, I.M.S., has been for some time making special investigations on the subject of cholera, and in the *Indian Journal of Medical Research* some of his very interesting results have been published. These included inquiry into the invasion of the tissues by the cholera vibrio, and the lesions of the gall-bladder and biliary passages in that disease. Major GREIG's studies have supplied a scientific explanation of the mechanism of the production of cholera carriers. In connexion with the subject of cholera it may be mentioned that Dr. RENAULT, Director of the Sanitary Service of French India, has reported good results from the treatment of this disease by hypodermic injections of emetine, the method being suggested to him by the success obtained by Sir LEONARD ROGERS with the same remedy in amœbic dysentery. Evidence has accumulated showing that the spread of cholera in India is associated in large part with the Hindu pilgrimages and bathing fairs, at which large numbers of natives assemble together under very unfavourable conditions, and where after an outbreak convalescents and chronic carriers convey the infection to distant parts of India. The sanitation of pilgrimages is therefore receiving increased attention.

Leishmaniasis.

Leishmaniasis continues to attract considerable notice in India as well as elsewhere, and special investigations are at present being carried out in Assam, the chief endemic centre of the disease, by Captain F. P. MACKIE, I.M.S., and Dr. V. T. KORKE. Captain W. S. PATTON, I.M.S., is continuing his investigation of this disease under the auspices of the Madras Government. Dr. R. ROW, of Bombay, has found leishmania donovani in the circulating blood of a kala-azar patient. This observer has also conducted a series of experiments on monkeys with L. donovani and L. tropica, and as the results were very similar he thinks that this may be regarded as a proof of the identity of these two organisms. In Europe cases of leishmaniasis continue to be found in many of the larger towns on the Mediterranean littoral; and in Marseilles Dr. PRINGAULT has found signs of the disease in the bone marrow of stray dogs taken from the streets. At the annual meeting of the British Medical Association at Aberdeen in July, Fleet-Surgeon BASSETT-SMITH, C.B., R.N., read a paper summarising our present knowledge on the subject of leishmaniasis.

Trypanosomiasis.

Trypanosomiasis is still being investigated in tropical Africa, and reports have been published during the year by the Royal Society's Commission, which includes Surgeon-General Sir DAVID BRUCE, C.B., A.M.S., Major A. E. HAMERTON, R.A.M.C., Captain D. P. WATSON, R.A.M.C., and Lady BRUCE. Among other work experiments have been carried out by them with laboratory-bred tsetse flies, G. morsitans, G. brevipalpis, and G. palpalis, as regards the transmission of various strains of trypanosomes. Dr. E. TEICHMANN, in German East Africa, has also been investigating the same subject, and has come to the conclusion that it would be correct to say that all species of glossina are capable of transmitting all species of trypanosomes provided suitable conditions are present. Surgeon-General Sir DAVID BRUCE regards T. brucei and T. rhodesiense as one and the same organism. He has recently proposed a new system of classification of African trypanosomes pathogenic to man and animals. With reference to the vexed question whether big game in Africa act as reservoirs of the sleeping sickness infection, Mr. RUPERT W. JACK, the entomologist for Southern Rhodesia, states that he has collected evidence which appears to favour strongly the view that there is a vital association between the prevalence of big game and the continuation or increase of Glossina morsitans in S. Rhodesia. The tsetse fly has disappeared from localities where big game has been destroyed by settlers in the process of opening up new country.

Yellow Fever.

Yellow fever has been exercising the minds of many epidemiologists of late, and important investigations have been carried out by a number of observers during the year. The Yellow Fever Commission (West Africa), appointed by the Secretary of State for the Colonies, has presented two reports, and a third is expected shortly. Several experts have utilised the opportunity afforded by an outbreak of the disease in Southern Nigeria to search for the specific parasite of the malady. Dr. J. W. SCOTT MACFIE and Dr. J. E. L. JOHNSON claim to have found the so-called "yellow fever bodies," to which the discoverer, Dr. H. SEIDELIN, has given the name of paraplasma flavigenum, in the blood of practically all the cases in and about Lagos diagnosed clinically as yellow fever. They also found the same bodies in the blood of some native dogs, and were able to transmit the organism through a series of guinea-pigs and other animals. Their work has been confirmed by Dr. SEIDELIN, who was despatched by the Commission to Lagos; this expert, along with Dr. A. CONNAL, also performed many animal experiments and examined many blood smears from human beings. Dr. SEIDELIN contends that, as in other infections, yellow fever may be spread by human carriers. These findings are now being carefully examined by the members of the West African Commission, who will, it is anticipated, give a definite pronouncement on them in their next report. Dr. A. BALFOUR has recently visited Trinidad, where there had been an outbreak of yellow fever, and hearing that among the negro population of the island there is a strong belief that an undue mortality among the red howler monkeys, which abound in the woods of the island, always precedes an epidemic of yellow fever, made some inquiries on the subject on the spot. His opinion is that it is quite possible that the red howler monkey in Trinidad may serve as a reservoir of the virus, from which it may be transferred by the stegomyia mosquito to man. The value of ducks as destroyers of the larvæ of stegomyia has also been pointed out.

Sprue.

Sprue has long puzzled the etiologist, but the researches of Dr. P. H. BAHR in Ceylon seem to have settled the problem. He identifies the organisms found in sprue with the thrush fungus, monilia albicans. Dr. ALDO CASTELLANI has contributed also to our knowledge of the hyphomycetes found in sprue. He believes that there is a plurality of species of the sprue fungi and classed under the name of M. albicans. Dr. CASTELLANI, who has been a frequent writer on tropical diseases, and who has carried out much research work in Ceylon, has just been appointed professor of tropical medicine in the University of Naples and director of the Royal Clinic for Tropical Diseases in that city. He leaves Ceylon to take up his new post early in the coming year.

Research Work by American Experts.

Much valuable work has been done by the American medical officers stationed in the Philippine Islands, and their scientific and practical contributions published in the *Philippine Journal of Tropical Medicine* have often been mentioned in the columns of THE LANCET, particularly as regards beri-beri, amœbic dysentery, plague, and other maladies. In the same way the medical experts from the United States stationed in the Panama Canal Zone, in addition to other original work, continue to demonstrate that modern scientific methods can reduce greatly the ravages of tropical diseases and render it possible for the white races to occupy and carry out their businesses in hot climates formerly regarded as extremely unhealthy for foreigners. In this connexion it may be mentioned that Surgeon-General W. C. GORGAS, who has directed sanitary measures in the Canal Zone, along with his two assistants, Dr. T. S. DARLING and Major R. E. NOBLE, were entertained at a public banquet by the medical profession in London on March 23rd, Sir THOMAS BARLOW, President of the Royal College of Physicians, being in the chair. The Annual International Sanitary Conference of the American Republics was held in December, 1914, at Montevideo, the capital of Uruguay. These annual conferences serve the very useful purpose of spreading the knowledge of sanitation and the modern prophylaxis of tropical diseases. In many places in South America an anti-mosquito campaign has been carried out of late with beneficial results.

Ankylostomiasis.

In the United States the subject of ankylostomiasis has been receiving considerable attention. An International Commission has been appointed as an offshoot of the Rockefeller Foundation, which was established to continue in foreign countries against hookworm disease the campaign which had been so successful in the United States. The foreign branch of this Commission is at present confining its operations chiefly to Egypt, where half of the expenses of the campaign in that worm-infested land are being defrayed by it and the other half by the Egyptian Government. Dr. A. F. MACCALLAN, who is directing the ankylostomiasis operations in Egypt, gave an account of the work being done in that country to the Section of Tropical Medicine at the annual meeting of the British Medical Association.

Pellagra.

With regard to pellagra the Thompson-McFadden Commission of the New York Post-Graduate Medical School continues its labours, and some officers of the United States Public Health Service, under the direction of Dr. JOSEPH GOLDBERGER, are carrying out an official inquiry on the subject, more particularly as to the incidence of the disease in public institutions in the Southern States and its connexion, if any, with institutional dietaries. Captain EDWARD B. VEDDER, of the Medical Corps of the United States Army, well known for his researches on beri-beri, has also contributed to the literature of pellagra in the *American Journal of Tropical Diseases* during the present year.

PUBLIC HEALTH.

At the end of this year considerations of public health centre on the position which has been brought about by the war and all that the war has entailed. Below we refer to a few of the important matters, some of which now seem curiously remote, which were occupying attention in this country in the time of peace, but the first portion of the space at our disposal must relate to events after the fateful early days of August.

Health of the Expeditionary Force.

So far our public health record has been good beyond anticipation. The British Expeditionary Force has suffered very little from epidemic disease. Enteric fever, so much dreaded, has been reported to be prevalent in various places near the seat of operations in the west, particularly among Belgian troops brought to Calais in November. But up to the end of this month its incidence on the British forces in France and Belgium has been relatively insignificant, amounting to less than 150 cases[1] altogether, a satisfactory result to be attributed in very large measure to the strenuous efforts of all branches of the Royal Army Medical Corps, and the action taken to obtain systematic inoculation of our soldiers with antityphoid vaccine. Cholera, which was reported as early as October among the forces operating in the South of Poland and Galicia, has fortunately not reached the Allied lines on the west, though its presence in Antwerp was rumoured more than a month ago, and attributed to the transfer of some of the enemies forces from the east. We have as yet no intelligence of small-pox or of any severe prevalence of dysentery in the western force. While these and other epidemic diseases may soon have to be encountered by our army abroad, it is believed that the present strategic position is giving time and opportunity for the organisation of measures of prevention and treatment in a way which was impossible in the earlier stages of the war. This consideration applies not only to personally communicable illnesses, but also to diseases resulting from exposure to cold, wet, and vermin, which are necessarily of enormous importance to the efficiency of the army. We look to the future with hopefulness, and with confidence in the men by whom this vital work is being so strenuously undertaken, both in the army and in the navy.

Sanitary Problems following Mobilisation.

At home the outbreak of the war led naturally to anticipations of the early prevalence of disease following general privation and unemployment. Fortunately, neither those conditions nor their consequences have arisen, and the general health of the population at home during the last five months has remained good. Some problems calling for special precautions by sanitary authorities and others concerned arose in connexion with the influx of Belgian refugees, many of whom were completely destitute,[2] but so far as we are aware no serious importation of infectious disease has followed the action taken by the nation in this matter. The ordinary routine of public health administration has naturally been considerably disturbed; many medical officers of health were mobilised with the Territorial Force, or have since joined the new armies, and have consequently been removed from their districts. Others have had to work with greatly reduced staff, and in most parts of the country temporary arrangements and appointments have been necessary to carry on the ordinary work of medical officers of health, medical inspectors of schools and factories, and the management of isolation hospitals, tuberculosis and Poor-law institutions. On mobilisation the relation of local public health authorities and their officers to the military units in their areas at once claimed attention, and in many places active measures were taken to assist the military authorities in matters of local hygiene. The need for more systematic action was, however, soon apparent. The steps taken jointly by the War Office and Local Government Board in this matter were fully referred to in recent articles,[3] and the importance of an official system of coöperation has since been increased by the augmentation of the new armies and the huge scale on which billeting of troops on the civil population has now been carried out. It is to be hoped that the arrangements already made will be further developed and utilised to the full.

Sanitary Condition of Home Forces.

For the sanitary supervision of troops in this country the Army Medical Service already had at their disposal the services of men familiar with military hygiene as regular or Territorial sanitary officers, and other public health experts have since been appointed from the civilian service for duty with the different divisions of the home forces. This service is as necessary and important as that of any other branch of the army; it has already done most valuable work, and its strength could probably be added to with advantage. A central committee, comprising civil and military members, was also appointed in November to advise the War Office on sanitary matters. The London sanitary companies of the Territorial Force have been utilised in the new armies and their strength increased. Inoculation against enteric fever has been successfully pressed among the troops at home, though not without some opposition from bodies which endeavour to create prejudice against all such methods of prophylaxis. Verminous conditions have in some places given considerable trouble, and in a few camps the problem of venereal disease has threatened to become serious.[4] The occurrence of epidemic measles among regiments recruited in the more isolated parts of the country, especially those from the Highlands and Islands, is also noteworthy. Piecing together the information available, we have no doubt that in camps and places in military occupation at home conditions have not infrequently arisen to which the hygienist would take serious exception, and that occasionally men have had to put up with overcrowding, insufficiency of blankets, untenable camping grounds or huts, and other defective arrangements which could have been prevented if medical considerations had been given time and opportunity to make themselves felt, but in the circumstances could hardly have been avoided. If, as we believe to be the case, those responsible for the conduct of the war realise the scope which ought to be given to considerations of hygiene and act on this knowledge, sanitary defects in the great new military organisation which has so rapidly come into being are bound to be remedied as time goes on, and provision for the housing and well-being of the troops, for ablution, excrement disposal, and similar matters will be improved where improvement is called for. It may be added that the Medical Research Committee established under the National Health Insurance Act[5] has undertaken to collect statistical data of sickness and mortality in our armies; no sickness rates in the home forces have been published, but they are generally understood to be satisfactorily low.

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[1] Discussion at Royal Sanitary Institute, Dec. 10th.

[2] THE LANCET, Sept. 26th (p. 816), Oct. 3rd (p. 867), and Dec. 12th (p. 1377).

[3] THE LANCET, Oct. 17th (p. 951) and 31st (p. 1053).

[4] THE LANCET, Oct. 24th, p. 1020.

Public Health Administration and Legislation.

During the year active progress has been made, and in many cases has continued during the war, in the normal course of public health administration at home. Local developments have received notice in our columns in reviews of the reports of medical officers of health and otherwise, and reference is here made only to a few larger movements. The organisation of institutional provision for tuberculosis, including the provision of new sanatoriums and dispensaries, and the use of existing hospitals for tuberculosis, has proceeded steadily, and its magnitude will be gathered from reports of the Local Government Boards and the Insurance Commissions. The Mental Deficiency Act, 1913, came into operation during the year. Ophthalmia neonatorum was made a disease compulsorily notifiable by an Order of the Local Government Board which took effect in April. For note of some developments in the work of factory inspection and hygiene of occupation which deserve to be recalled, we may refer to the review of the last annual report of the Chief Inspector of Factories in our issue of July 25th. Reports of Departmental Committees on the manufacture of celluloid, petroleum, and flax, in their relation to the health and safety of the workers, have appeared during the year.

The Elementary Education (Provision of Meals) Act, 1914, altered the law of 1906 by legalising the provision of meals by education authorities during holidays and by removing the limitation of expenditure on meals to a halfpenny rate, half the expenditure being now repayable through Government grants. Other grants have been authorised by the Education Department in respect of schools for mothers and similar objects. The question of child welfare and the prevention of infant mortality has also been brought prominently before sanitary authorities by the Local Government Board, and generally much has been done by central and local public authorities both to create and to meet a demand for State-aided "maternity centres" and organisations for the supervision of the health of the child from birth to school age.[6] These and other activities of Parliament and of Government departments have drawn attention to the strain which they impose on our system of local public health administration, and questions of reorganisation of the Public Health Service, including security of tenure and position for local medical officers, have been freely discussed during the year.[7] The Budget of 1914, as originally introduced, promised many things in the interests of public health and proposed to effect considerable changes by greatly expanding the system of Government grants to local authorities. Some of these grants were to be in aid of expenditure on general public health work and dependent on efficiency, while others were earmarked in aid of housing, nursing, maternity and child welfare work, pathological laboratories, and sanatorium provision. Most of these proposals, however, are at present in abeyance.

Other legislation during the year included a short amending Housing Act, and new Milk and Dairies Acts for England and Scotland.[8] The latter measures, taken with departmental orders of the Board of Agriculture in relation to bovine tuberculosis, should do much to improve the milk-supply of the country when they can be put into operation, and their enactment is a matter for satisfaction in view of the fate of previous Bills on the same subject. The issue in August of the valuable report of the Select Committee on Patent Medicines[9] deserves special reference. Summaries of the proceedings of the Royal Commission on Venereal Diseases during the year have appeared in our columns. The report of the committee appointed by the National Insurance Commission to consider sickness benefit claims, issued during the present month, deals with several large questions which may affect the future of public health work in this country, while reference may also be made to the extensive first programme of investigatory work which has now been formulated by the Medical Research Committee.[10]

ANÆSTHETICS.

The International Medical Congress of 1913 has given an impetus to the wider adoption of the newer methods of anæsthetisation, especially in the case of ether. H. Kümmel[1] was one of the earlier adherents of the intravenous etherisation method. His work shows that much of the ether which enters is at once excreted by the lungs. The examination of blood taken from the arm farthest from the site of entry proves that the erythrocytes are unharmed; indeed, necropsies of patients dying soon after the operation emphasised this fact, and have indicated the absence of consecutive damage to viscera. There is no doubt of the value of this method, especially for operations about the head and upper air passages, provided that the precaution is taken to have an apparatus which allows of accurate dosage, an end easily achieved if two supply bottles are in use, the one for saline, the other for ether-saline solution. A Y connexion yokes them together, so that one or the other is constantly flowing. Abroad, as Kümmel points out, isopral is used as a preliminary, especially for sthenic and excitable subjects. Hedonal has been less used of late, being more dangerous than isopral; its employment for children, however, has been chronicled in The Lancet.[2]

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[5] The Lancet, Dec. 5th, p. 1315.

[6] The Lancet, April 25th (p. 1193) and Sept. 26th (p. 805).

[7] See, e g., *Public Health, passim*, and The Lancet, June 20th, p. 1757.

[8] The Lancet, May 23rd, p. 1474; August 22nd, p. 512.

[9] The Lancet, Sept. 5th (p. 653) and 12th (p. 702).

[10] The Lancet, Dec. 5th, p. 1315.

[1] Surgery, Gynæcology, and Obstetrics, September, p. 334.

[2] T. Twistington Higgins: The Lancet, May 16th, p. 1404.

The comparison between the actions of chloroform and ether has been admirably worked out by Dr. H. P. FAIRLIE,[3] who adduces some interesting and important conclusions as regards blood pressure. His paper continues previous work to which we have referred. Chloroform depresses blood pressure, and when surgical shock develops the fall is the sum of these depressions. Provided the declension is limited within the safety zone the pressure rapidly rises after the operation. With ether, unless the inhalation is prolonged, a little fall occurs, but if the trauma causes depression of the blood pressure the fall that ensues is as severe as that summing the chloroform and shock total, while the recovery period is prolonged and not devoid of danger. The warning to use chloroform for cases involving great shock is salutary at this time when ether is so widely used and little care is taken to inquire whether or not chloroform should be employed rather than "open ether." FAIRLIE'S experiments show conclusively that the plan of inducing anæsthesia by an ether sequence and maintaining it with chloroform results in the least shock. Intratracheal methods have become more widely used, and many papers dealing with this important matter have appeared. However, misapprehensions appear to exist, and some workers have failed to master the physiological facts enunciated by MELTZER and AUER, the pioneer workers, facts which underlie the safety of the method. We have animadverted upon this in referring to the suggested use of chloroform by intratracheal insufflation.[4] Mr. W. D. MART'S plan is equivalent to giving chloroform by an intubation or tracheotomy tube, and has not the safeguard of the true intratracheal system, in which pulmonary plus-pressure protects the lungs from the entry of blood from the mouth by establishing a powerful expiratory current of air. Dr. M. S. PEMBREY[5] found that during intratracheal insufflation the average rate of pulmonary ventilation is 16 litres per minute, the extremes being 8 litres and 30 litres; the latter induced apnœa, which is undesirable. Dr. G. MARSHALL having examined blood pressure during the use of this method noted but slight change; 5 to 10 mm. Hg below the mean pressure resulted in prolonged operations.[6] He remarked that the blood pressure varies directly with the CO_2 tension. The use of the oil-ether-rectal method of GWATHMEY[7] has been discussed not wholly favourably.[8] Dr. LUKE found among his patients in the St. Luke's Hospital, New York City, that intestinal cramp, painful abdominal fulness, persistent anal irritation, and unduly prolonged induction were common complications. More serious sequelæ were dangerous respiratory depression, "over-dosage," colitis, proctitis, and an alarmingly prolonged period of torpor.

P. KLEINSCHMIDT[9] gives his clinical experience of rectal anæsthesia by the use of isopral. In 43 cases he used 0·1 grm. (per kilo body weight) per rectum. Although some successes occurred, his verdict is that the method is unreliable as excitement, even maniacal, and toxic effects were evoked. We note that Dr. CRILE'S[10] "kinetic theory of shock, and operation without shock" has found many adherents, perhaps rather to his methods than to his theory, and English workers express satisfaction with their results. Another system to which many papers refer is the Roth-Dräger ether-chloroform-oxygen method, a truly dosimetric plan, and one which is gaining popularity on the continent. H. HINTERSTOISSER[11] as well as Dr. BRAUER notice the danger of giving narcophin, morphine, and like drugs to patients after the operation in cases in which the morphine-scopolamine-ether or chloroform sequence has been adopted. The respiratory centre becomes blunted and undue CO_2 tension is apt to follow. The important subjects of status lymphaticus and post-operative toxæmia (delayed anæsthetic poisoning) have received attention in several valuable communications.[12] Dr. G. GELLTHORN,[13] dealing with spinal analgesia in gynæcological operations, remarks upon the unrecognised frequency of acetonuria in this connexion.

The foundation of a Society of Anæsthetists in Scotland mentioned in THE LANCET[14] is a sign of progress. Dr. W. H. HORNIBROOK[15] makes a vigorous protest against the relegation of expert anæsthetists to a subsidiary status, while Dr. A. C. VANDIVER[16] discusses the germane subject of the legal status of trained nurses who give anæsthetics. The following useful papers may be consulted with advantage: Analgesia, H. NEUHOF,[17] L. KENDIRKJY,[18] M. TRANGOTT,[19] DOLLINGER,[20] HONIGMANN,[21] and A. H. MILLER.[22] Dr. W. A. SCHTANGE'S[23] paper is at once most valuable and novel. He elaborates his "heart test" as to whether an inhalational anæsthetic may be safely given. It depends upon the patient's ability to hold his breath without cardiac effect up to or beyond the normal, which he places between 30 and 40 seconds.

THE NAVAL, MILITARY, AND INDIAN MEDICAL SERVICES.

THE ROYAL NAVAL MEDICAL SERVICE.

Towards the end of 1913 the Lords Commissioners of the Admiralty adopted certain recommendations of the Medical Consultative Board, made with the object of remedying the alarming shortage in the medical department. Disciplinary control, as regards minor punishments, of the sick berth staff at Haslar, Plymouth, and Chatham, was delegated to the senior medical officers at these stations. The senior medical officer is now to preside at medical surveys; the director-general has control over the publication of papers on professional subjects; private practice is allowed; the publication of a journal is approved of; and the charge of the large naval hospitals at Malta, Gibraltar, Bermuda, and Hong-Kong is now in the hands of the senior medical officer. These are substantial concessions to justice and common sense. There are other grievances, such as the old-standing one of cabin accommodation, that have still not been dealt with satisfactorily, and the creation of specialist appointments, as in the Army Medical Service, is now long overdue, the experience of the army having for many years demonstrated its value and true economy.

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[3] THE LANCET, Feb. 28th, p. 603.

[4] THE LANCET, Nov. 7th, p. 1085, Apparatus for Intratracheal Chloroformisation.

[5] Section of Anæsthetics, March, Royal Society of Medicine.

[6] See also THE LANCET, Nov. 7th, p. 1087, and Nov. 21st, p. 1220.

[7] New York Medical Journal, Jan. 31st.

[8] See Therapeutic Gazette, March and August.

[9] Berliner Klinische Wochenschrift, Feb. 2nd, No. 5.

[10] Revue de Chirurgie, January.

[11] Wiener Klinische Wochenschrift, Dec. 11th.

[12] Proceedings of the Pathological Society of Great Britain and Ireland, Brit. Med. Jour., Jan. 17th; Emerson, Archives of Internal Medicine, Jan. 15th; C. McNeil, Edin. Med. Jour., January.

[13] Surgery, Gynæcology, and Obstetrics, September, p. 334.

[14] THE LANCET, Feb. 28th, p. 639.

[15] Practitioner, June.

[16] New York Medical Journal, May 30th.

[17] Journal of the American Medical Association, May 23rd.

[18] La Presse Médicale, Jan. 17th.

[19] Münchener Medizinische Wochenschrift, May 26th.

[20] Zentralblatt für Chirurgie, 20.

[21] Ibid., Feb. 7th.

[22] Journal of the American Medical Association, Jan. 17th.

[23] Roussky Vratch, Jan. 18th.

The obituary list includes the name of Surgeon-General MAXWELL CRAIG, C.B., who was first principal medical officer of the hospital ship *Maine* during the Boer War. The naval director-general, Surgeon-General A. W. MAY, was advanced to the rank of K.C.B. on the King's birthday.

THE ARMY MEDICAL SERVICE.

The scientific research work, of which results have been published during the past year, includes a continuation of the experimental investigations of the Sleeping Sickness Commission by Sir DAVID and Lady BRUCE, Major D. HARVEY, Major A. E. HAMERTON, and Captain D. P. WATSON; and of the work of Lieutenant-Colonel T. W. GIBBARD and Major L. W. HARRISON on treatment of syphilis with salvarsan. Lieutenant-Colonel W. W. O. BEVERIDGE, D.S.O., conducted an inquiry into the keeping properties of condensed milk at the temperatures of tropical climates. An interesting practical test as to the sufficiency of the existing field service ration was carried out by Colonel C. H. MELVILLE, Major W. W. BEVERIDGE, and Captain N. D. WALKER, assisted by Professor J. S. HALDANE and Dr. M. S. PEMBREY. The conclusion arrived at was that the ration should be increased, particularly in the constituents of fatty and saccharine material, so as to bring it up to 4600 Calories.

Personnel.

The most important changes in personnel during the year have been the appointment of Sir A. SLOGGETT to be director-general consequent on the retirement of Sir L. GUBBINS. Surgeon-General W. G. MACPHERSON became deputy director-general in succession to Surgeon-General W. BABTIE, V.C., who became director of medical services in India. Major S. L. CUMMINS was appointed professor of pathology at the Royal Army Medical College, in succession to Sir W. LEISHMAN, F.R.S., who is now expert in tropical diseases on the Advisory Board. Consequent on the war very numerous changes have taken place. The office of director-general is for the time duplicated; Sir A. SLOGGETT is now director-general of the Expeditionary Force across the Channel, and Sir A. KEOGH is in charge of the office at home. During the autumn Sir A. KEOGH spent a considerable time on the continent as Chief Commissioner of the British Red Cross Society, and is consequently fully acquainted with the military medical conditions and requirements. Surgeon-General S. HICKSON has succeeded Surgeon-General M. W. O'KEEFE as inspector of medical services.

A new committee has been appointed to advise the Secretary of State on sanitary matters, which is really the resuscitation of a former one that did good work in its day and was improved out of existence without due consideration. The chairman is Brigadier-General F. J. ANDERSON, R.E., and the members include Sir F. TREVES, Dr. A. NEWSHOLME, Dr. H. R. KENWOOD, Dr. JOHN ROBERTSON (Birmingham), Colonel W. H. HORROCKS, and Major C. E. P. FOWLER.

Obituary.

Sir ANTHONY HOME, V.C., K.C.B., was the most distinguished army medical officer of his time. He had served through the Crimean and Mutiny campaigns, winning his V.C. at Lucknow, and was subsequently on active service in China, New Zealand, and Ashanti. His autobiography, "Service Memories," edited by Colonel C. H. MELVILLE, is a striking record of successful, indeed brilliant, work in many spheres of action. In spite of the numerous perils he had encountered he lived to be 87. Sir JOHN BY COLE READE served through the Crimea, the Mutiny, and the Second Afghan War, and lived to be 82. Lieutenant-Colonel CHARLES DALTON had received both the British and French Humane Societies' medals for jumping overboard off the coast of South America, when the *Cotopaxi* went down. In West Africa he also performed notably gallant actions, also in the South African War.

THE INDIAN MEDICAL SERVICE.

Scientific Research Work.

Work continues steadily at the various bacteriological institutes in different parts of India, but nothing of outstanding importance in discovery has occurred during the past year. Researches have been conducted in relation to antimalarial measures in the Meerut district and elsewhere, and distinct advance seems to have been made in some directions. An eighth Plague Report has been issued, dealing chiefly with the mechanism of transmission and the bionomics of rat fleas. A third All-India Sanitary Congress was held at Lucknow in January, at which 21 resolutions were carried, relating to all branches of sanitation. The papers read and discussions added largely to the general fund of knowledge in various directions, and it may be hoped that progress will be made in at any rate some of these directions. At Calcutta a school of tropical medicine has been established which may be expected to prove its usefulness in a very short time. Proposals have also been made for the establishment of a similar institution for the Bombay Presidency at Parel; the existing laboratories at the old Government House have been improved and renovated, but no funds have yet been allotted to enable the institution to be carried on in a manner commensurate with its importance to the State.

During the year the Indian Government issued a weighty resolution, laying down the broad principles on which sanitary advance in India must be based: (1) knowledge of the people, their customs, &c., and success in securing their coöperation; (2) recognition of the diversity of conditions in a country which contains many different races, creeds, and communities, and exhibits almost every variety of climate; and (3) need for preliminary local inquiries.

Organisation.

An order was issued in April, 1914, that medical officers and subordinates in military employ should render medical assistance gratuitously, when called upon to do so, to civil departments; and *vice versâ* civil medical officers and subordinates should give similar assistance to military departments. This is an extension of an old order of 1881, but the order has been drafted in such a slovenly manner that friction is certain to arise unless it is more precisely worded. It should be definitely stated who are entitled to call upon the medical officer for his services, and under what circumstances.

An inquiry was held by the Public Services Commission in India as to the conditions and prospects of the medical department at the end of 1913, and the director-general and other officers gave evidence. The question of rewards for original research has been discussed by Sir RONALD ROSS, Professor W. J.

SIMPSON, and others. The official mind seems to be unable to perceive that ROSS'S work was of any substantial benefit to the State or the community, or deserving of pecuniary recognition. Nothing could be better calculated to repel the zealous student, with inclinations towards scientific research, from entering the medical service of the Indian Government, than a study of this correspondence. Dissatisfaction has been publicly expressed in Burma at the inadequate provision of European medical officers in the province; the Chamber of Commerce considers that the policy of repression of the Indian Medical Service is detrimental to the progress of the country. The local government replied sympathetically, stating that the need for more European civil surgeons had been represented to the Government of India.

The education and qualifications of military assistant surgeons in India have been under the consideration of the Examinations Committee of the General Medical Council, whose report, presented by Sir CHARLES BALL, has been transmitted to the India Office.

Personnel.

On the occasion of the KING'S birthday the honour of knighthood was conferred on Lieutenant-Colonel LEONARD ROGERS. Colonel C. C. MANIFOLD and Lieutenant-Colonel W. R. EDWARDS received the C.B., and Lieutenant-Colonel G. J. HAMILTON BELL, Lieutenant-Colonel W. MOLESWORTH, and Lieutenant-Colonel E. D. W. GREIG received the C.I.E. Colonel W. B. BANNERMANN has been appointed Honorary Physician to the King, and Colonel R. W. S. LYONS has become Surgeon-General with the Government of Bombay. Sir PARDEY LUKIS has had his tenure of the office of Director-General, Indian Medical Service, extended for two years, until Dec. 31st, 1916.

The obituary list includes the names of Sir ARTHUR BRANFOOT, K.C.I.E., lately President of the India Office Medical Board, and formerly surgeon-general with the Government of Madras; Sir TREVOR LAWRENCE, formerly of the Bengal Medical Department, who served through the Mutiny; and Sir ANNESLEY DE RENZY, K.C.B., who served in the Burma War of 1852, was present at the capture of Lucknow, was First Sanitary Commissioner of the Punjab, and was principal medical officer of the Naga Expedition in 1879. Surgeon-Major A. C. MACLEOD took his M.R.C.S. in 1840 and entered the Madras Service in 1846. He served in the Mutiny campaign and had long been the senior officer on the Madras Retired List.

FORENSIC MEDICINE.

The legislative season of 1914 produced nothing of great medical significance, nothing, that is to say, upon the scale of the National Insurance or Mental Deficiency Acts, nor can it be said that the law courts have witnessed the trial of any case of outstanding medical importance. Nevertheless, to borrow the phraseology of the official *communiqué*, the science of medicine at several points has consolidated its position, repulsed attacks, and made appreciable progress. More particularly is this the case where the activities of the quack have brought him into contact with the law. The importance of successes in dealing with persons of this class under the law as it stands lies in the fact that the medical profession not unreasonably looks forward to seeing the law eventually strengthened. In a democratic country the existing state of affairs is not likely to be amended in a direction disapproved by the electorate, and verdicts gained against fraudulent impostors afford some indication that the public, represented in a particular instance by a judge and jury, is ready to look upon quacks and quackery as public dangers of a preventable character.

We may refer more particularly to the trial of MILLER at the Old Bailey,[1] when Mr. Justice ROWLATT, in passing sentence after a verdict of manslaughter, said that the conviction was of importance as showing that persons who with no, or little, knowledge dealt with dangerous poisons could be found guilty of a crime in spite of "tall talk about cures, wonderful mental treatment, the unity of the infinite, and all that sort of stuff." His lordship also intimated that on future occasions of a similar character he might not be so lenient. No less satisfactory was the conviction at the same court earlier in the year of DELVINE,[2] whose exploits as a "cancer expert" caused him to be "wanted" in many places besides London, where he received a sentence of 15 months' hard labour. Another cancer expert[3] received a warning from the coroner at Altrincham after an inquest upon one of his patients which will doubtless inculcate caution on his fraternity. Cases in the civil courts, also tending to discredit and disconcert the unqualified person who pretends to treat his neighbours in illness, may be noted. In two of these the Society of Apothecaries recovered the full penalty of £20 against defendants (BURDEN[4] and PURDUE[5]) whose patients became the subjects for coroners' inquests. The fact that these actions can be successfully brought, and the full penalty recovered, is an indication that the courts and the legislature do not regard the principle of protecting the public as obsolete, and would be willing to see its application extended. The success of plaintiffs in civil actions where they have been injured by sham practitioners, particularly in dental cases,[6] has occurred in 1914 as in other years, but the victims are generally unwilling to admit themselves duped or shrink from the expense and annoyance of litigation. Impostors who pose as medical men and even give medical certificates generally end in the clutches of the criminal law, and two of these sentenced in the past year may be referred to. One of them,[7] who used the names of a medical man practising in Africa, was sentenced to a month's imprisonment, after having apparently imposed on the public for some years. The other, J. CUBBIN, pleaded guilty at the December Sessions at the Old Bailey to giving medical certificates without being qualified, and was sentenced to three years' penal servitude, being already a convict on licence.

Other happenings in forensic medicine during the past year suggest a growing general recognition of the dangers of quackery. The Report of the Select Committee on Patent Medicines[8] is not a document which Parliament is likely to disregard when there is time once more for domestic legislation. Cases of a different character from those referred to above which deserve mention include the judgment of the Court of Appeal in EASTES *v.* RUSS,[9] involving the consideration of important points with regard to covenants in restraint of trade, their interpretation, and their reasonableness; and the case of Hughes *v.* Robertson,[10] in which Lord Anderson in the Court of Session, Scotland, usefully summed up the points to be considered by medical men when asked to hold post-mortem examinations, where the authority of the person making the request may not be quite clear.

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[1] THE LANCET, Oct. 31st, 1914, p. 1059.
[2] THE LANCET, May 9th, 1914, p. 1346.
[3] THE LANCET, July 25th, 1914, p. 251.
[4] THE LANCET, May 23rd, 1914, p. 1483.
[5] THE LANCET, July 11th, 1914, p. 103.
[6] See THE LANCET, March 28th, 1914, p. 914, Foulkes *v.* Hughes.
[7] THE LANCET, July 25th, 1914, p. 251.
[8] THE LANCET, Sept. 12th, 1914, p. 1710.
[9] Delivered in 1913, but see THE LANCET, Jan. 3rd, 1914, p. 55.

In conclusion, we may congratulate those medical men who by legal action have successfully defended their professional characters against aspersion. Among these special reference should be made to Dr. A. Drury,[11] who brought an action against the officers of the National Antivaccination League, securing a settlement upon terms favourable to himself, and Mr. W. J. C. Keats,[12] accused of cruelly flogging boys in the Camberwell Infirmary. Dr. Warrington Yorke[13] should be included with these in that before magistrates and upon appeal to the High Court he successfully repelled unwarrantable charges of cruelty made upon him in connexion with his work as director of the Runcorn Research Laboratories at Crofton Lodge.

It may be safely concluded that in the eventful year 1914, so far as the records of the law supply evidence, the medical profession has strengthened and consolidated its position in the public esteem.

DENTAL SURGERY.

During the past year considerable attention has been drawn to the importance of oral sepsis. In the July and August issues of The Lancet we published several letters on oral sepsis and the extraction of teeth. The discussion was introduced by Sir James F. Goodhart, who uttered a warning against the free extraction of teeth for the removal of sepsis. The writers who condemned this proceeding and considered that the consequences of oral sepsis were exaggerated were ably answered by those who think that its importance is even yet not sufficiently recognised. A good deal of the misconception in the minds of many with regard to this subject is probably due to a lack of appreciation of the modern concepts of general pathology and the special pathology of the disease. It is more than probable that the slow but constant absorption of the organisms from the affected area does the damage, and this may be taking place in what is to the untrained eye an apparently clean mouth. The question to be answered by the opponents of free extraction is this: Can they guarantee to rid the individual of that source of infection without resorting to efficient drainage—namely, extraction? The recognition of the importance of this radical treatment has been emphasised by Mr. W. M. Beaumont in a paper on the Evolution of Iritis,[1] and by Mr. Wilfred Trotter,[2] in his article on Prognosis in Cancer of the Tongue.

It is satisfactory to be able to record that scientific methods are being more widely adopted in attacking the problems of dental pathology, an excellent example being the work carried out by Dr. W. J. Gies[3] on the relation of potassium sulphocyanate to dental caries. His work satisfactorily shows that this salt, in the proportion found in normal saliva, does not in any way influence caries of the teeth. The papers published on abnormalities in position of the teeth show that an earnest endeavour is being made to ascertain the real cause of these conditions. A study of the animal kingdom has shown that many of the irregularities of the teeth seen in man are met with in animals, and that the question of the relative variation of the teeth and jaws is in some measure associated with the production of a crowded arrangement of the teeth.

ANATOMY.

The year 1914 is not one to be looked back upon as having witnessed any very marked progress in the study of anatomy. Much detailed work has been done both here and in America, and the number of well-studied human embryos of which we have accurate and permanent reconstructions has greatly increased. Perhaps most finality has been reached by the publication of what is a summary of many investigations upon the origin and nature of the lymphatic system by Professor George S. Huntington, of Columbia University.[1] On the whole it may be said fairly that the original work published during the year may be regarded as bricks and mortar—in many cases very good building material indeed—but that very little actual building has been attempted. From the continent no anatomical literature has been received since the outbreak of war.

Both here and in Australia the discussion on the now famous Piltdown fragments has been continued, and much good has resulted, for everyone who ventured an opinion upon the subject weighed with the greatest care the reliance he could confidently place on any methods he employed; and in this way we have obtained some certain knowledge of the efficiency, and the limitations, of anthropological methods. The recent bringing to light of the Australian skull will certainly add a new phase to the progress of research into the early history of man.

Death has taken heavy toll of anatomists in 1914. In Walter Holbrook Gaskell is lost the thinker and worker who, perhaps more than any other man of recent times, shook zoological beliefs to their foundations and set men thinking. It should be a source of some satisfaction to anatomists to remember that it was their journal which opened its columns to the revolutionary work of Gaskell at a time when the proper publication of his ideas was by no means easy. Charles Barrett Lockwood, whose ten years' work in the anatomy rooms of St. Bartholomew's Hospital laid the foundation of a wonderfully sound anatomical knowledge, was one of the founders of the Anatomical Society. Lockwood, in his "suspensory ligament," had attained a distinction given to no other living anatomist in that his name was indelibly associated with a structure of the human body in the nomenclature of the British schools. William Bruce Clarke also taught anatomy to successive generations of students at St. Bartholomew's, where his career as demonstrator opened in 1882. For six years he taught in the rooms, afterwards being lecturer on anatomy at the same school. The death of Richard John Anderson of Galway deprives anatomy of a personality that can ill be spared. In 1846 John Goodsir was lamenting the rarity of the anatomist who could be said to have a knowledge wide enough to embrace all that was contained within the ken of such men as Haller, Hunter and the Meckels.

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[10] The Lancet, Jan. 10th, 1914, p. 131.

[11] The Lancet, Jan. 31st, 1914, p. 337.

[12] The Lancet, Feb. 28th, 1914, p. 631; Oct. 31st, p. 1059.

[13] The Lancet, May 30th, 1914, p. 1557.

[1] Brit. Med. Jour., Sept 26th, 1914.

[2] The Lancet, Oct. 24th, 1914.

[3] Dental Cosmos, February, 1914.

[1] American Journal of Anatomy, vol. xvi., No. 3, July, 1914, p. 259.

Since Goodsir's day that type of man has become still more rare; and without going so far as to say that in ANDERSON we have lost such a one as these, we may safely affirm that for wide, varied, and curious information upon zoology, morphology, and the other kindred subjects he knew no equal.

CHEMISTRY.

Whilst it would be untrue to say in the now familiar words of the *communiqué* "there is nothing to report" in regard to the chemical progress of the past year, there has been no development of a sensational character. During the past few months the importance of applied chemical science has been realised by the nation, and organisations have been begun which promise to found industries which have been either lost or neglected for reasons which reflect little credit either to science or to industry. In many directions there can be no question that British industries are handicapped by the difficulty of obtaining raw materials, but it is equally true that for far too long a time this country has exported vast quantities of valuable raw materials out of which fine products, as. for example, dyestuffs, synthetic remedies, could have been made here as satisfactorily as anywhere else. Amongst the many morals to which this great war will surely point will be our duty to establish an independence in this country in regard to the supply of many valuable manufactured articles, and to give every conceivable encouragement to scientific training and its application to industrial operations.

Synthetic Studies.

Early in the year it was announced that the synthesis of certain organic compounds had been affected by photo-energy. Sugars, it was confieently asserted, could be built up from carbonic dcid gas and water by exposing these simple compounds to the action of ultra-violet light. We are not aware that these statements have been confirmed, but they open a fascinating field for study if only they suggest following the lead of sunlight which actuates the great synthetic processes in plant life.

Radium.

The hope has been expressed that the activities of radium might be obtained perhaps by electrical means and render us independent of the supplies of this ultra-rare material. However this may be, Sir WILLIAM RAMSAY has suggested in our columns an economical and effective way of employing radium in therapeutic practice. He recommends its application in the form of niton or emanation rather than as a salt of radium on the ground that in the latter case there is considerable risk of loss of the precious metal, while this method does not ensure a continuous application, as, for example, through the night. The production of niton from radium is continuous, it goes on night and day, and the radiating power of niton is 75 per cent. of that of the radium from which it is derived. It seems to be accepted that the favourable results of radium treatment are due to its stimulating effects upon cell activity and generally in promoting healthy metabolism.

Metallic Colloids as Germicides.

The search for a germicide which will kill disease organisms, whilst producing no toxic action on the human organism, is meeting with some success in the series of metallic colloids which have been prepared. It is not at all improbable that as this study is pursued colloidal preparations may be found which will supersede the complex arsenical compounds used in syphilitic disease. Colloid preparations of mercury, arsenic, and silver have at any rate been prepared which, while effective in quite small doses in killing bacteria and ferments, have no toxic action on the body.

It is suggested that the action is due to the fact that each metallic colloidal particle carries a charge of electricity, and that these particles are all electrified in the same manner and therefore are mutually repelled, so that, in spite of their very active movement, they do not and cannot touch each other, and thus do not lose their charge. When, however, a foreign neutral body (such as a disease organism) enters the solution these electrical particles are not repelled from it automatically, but may even be attracted to it if it happens to carry a charge of the opposite polarity by the action of adsorption. The organism in any case, being of much greater mass, will receive the charges of many thousands or millions of particles of metal, and this may conceivably account for its death. The metallic colloids, as their preparation is improved, may thus come to be of distinct service in medical and surgical practice.

Vitamines.

We are beginning to learn more about vitamines in their relationship to the so-called deficiency diseases, but it must be said that the exact chemistry of these bodies is by no means cleared up. They have recently been suggested as factors in pathogenic processes, as, for example, that of cancer, in which a pathological new growth of tissue appears, owing possibly to the stimulus of a special vitamine. The question as to whether it is possible to inhibit this new growth by careful regulation of the diet with the view of excluding the vitamine has seriously been raised. We must clearly await more definite evidence before such a line of argument can be pursued with advantage.

CONTRIBUTIONS FROM "THE LANCET" LABORATORY.

Special investigations have involved a very decided increase in the number of analytical determinations made this year in THE LANCET Laboratory. The total from all sources last year was 432 and this year it is 835. This increase has been due to (1) a special article on Toilet Soaps from an Economic and Hygienic Point of View, involving 291 analyses; (2) five special articles on THE LANCET Hygienic Test for Gas Fires, involving 305 tests; and (3) 60 analytical estimations in connexion with the work of the Committee for the Investigation of Atmospheric Pollution, the analysis of the collected rainfall at the Meteorological Office, London, being undertaken in THE LANCET Laboratory.

In the column, "Reports and Analytical Records from THE LANCET Laboratory," 67 articles were reported upon, involving 179 analytical determinations.

The test originated in THE LANCET Laboratory early in the year, by which a simple chemical means was found for detecting whether a gas fire permitted the escape of combustion products into the air of the room, has received the endorsement of the gas fire industry, and, as a rule, no gas fire is accepted "unless it has passed

THE LANCET test." We have been appealed to by practically all the leading gas fire makers in the country to submit their fires to this test. This we have been quite willing to do, and the results have been reported in our columns during the year. The standard has been established and is effecting a satisfactory hygienic reform which is calculated to place this system of domestic heating on a higher level than before, and to rid it from the reproach of producing an unhealthy atmosphere.

In THE LANCET of July 18th we published the results of the examination of a golf ball which had been dissected by a person curious to know its composition. When he reached the core there was a sudden ejection of a liquid substance which struck his eye with some violence. A serious but happily temporary injury was done to the tissue of the eye. Our analysis showed that the fluid under pressure consisted of strong alkaline potash soap.

A feature of the work of THE LANCET Laboratory during the past few months has been the examination of a number of samples which were claimed to replace effectively well-known German preparations.

PHARMACY.

The practice of pharmacy during the past year has been subject to no fundamental alterations other than the changes of the last few months resulting from the state of war.

The National Insurance Acts and other Matters.

Attention has largely been concentrated on a number of considerations arising out of the administrative developments of the Insurance Acts. The most material of these has been the increased demand on the drug fund in many areas and the consequent endeavour to devise ways and means of avoiding deficiencies in the sums allotted for the payment of drugs and dispensing. Various committees set up by the new medical benefit regulations have been occupied with this question but apparently with no completely satisfactory solution. The necessity of utilising to the full their powers of setting in motion the machinery for the surcharging of panel practitioners who prescribe too generously has been impressed upon pharmacists by the Commissioners, and in many areas the systematic examination of prescriptions is being carried out. But, in any case, a heavy discounting of chemists' accounts in many areas appears to be inevitable. Late in the year much adverse comment has been aroused by the action of the Commissioners in requiring Insurance Committees to insert in their agreements with chemists a clause providing for reduced fees for the dispensing of stock mixtures. The operation of the Insurance Acts has required some further alterations in pharmaceutical organisation. Under the new scheme the local pharmaceutical associations are coterminous with local Insurance Committees, and the associations are federated, the central body being an executive committee on which the Council of the Pharmaceutical Society is well represented. The Council of the Pharmaceutical Society has authorised the establishment of a permanent Parliamentary fund for the purpose of maintaining, and if possible increasing, the direct representation of pharmacy in the House of Commons, and the invitation for subscriptions has met with good response.

In the scientific field an average amount of useful work has been accomplished and the result duly recorded at the annual meeting of the British Pharmaceutical Conference[1] and at evening meetings of the Pharmaceutical Society. In connexion with the preparation of legislative measures to give effect to the provisions of the International Opium Convention,[2] the Under Secretary for Foreign Affairs has been in consultation with representative medical and pharmaceutical authorities with a view of ascertaining what changes in the law as to the distribution of dispensed medicines are expedient; he has been informed by the Council of the British Medical Association that in their view it is desirable and practicable to limit the sale to private persons of medicines containing morphine, cocaine, and certain other narcotic drugs dispensed in accordance with a medical practitioner's prescription.

Pharmacists and the War.

In common with all classes, pharmacists have experienced the effects of the war; the volume of business has been reduced considerably and the prices of a large number of drugs have advanced substantially. But owing to the action of the Government, on the advice of a committee of experts, the advance in prices has not been so great or so general as it might have been in the absence of Government intervention; the prohibition of the export of certain drugs and the passing of legislation empowering the authorities to make inquiries as to stocks and to seize stocks if necessary have combined to prevent depletion of material and to arrest undue fluctuations of prices. The increase in the cost of drugs has had the effect of diminishing the profits of panel chemists, who are under contract to supply medicines on terms regulated by a tariff which was drawn up when values were normal; but to some extent the situation has been ameliorated by the action of the Commissioners in allowing payment on special terms for drugs included in a list known as the War Schedule. Some progress has been made in the attempt to manufacture in this country products which were formerly supplied from Germany, but there are many difficulties to be overcome before it will be possible to establish the synthetic drug and fine chemical industry on a satisfactory basis in this country. Only in a few cases have licences been granted to British firms to work German patents or to use German trade marks. In connexion with the free medical treatment of the necessitous dependents of soldiers and sailors, pharmacists have willingly coöperated with medical men. An endeavour has been made to give special help to pharmaceutical refugees from Belgium, and chemists have also interested themselves in the appeal made by the Belgian Doctors and Pharmacists Relief Fund committee.

The report of the Select Committee on Patent Medicines presented to the House of Commons in the late summer has met with the approval of all those whose desire it is to secure measures for the protection of the public health and the suppression of practices indistinguishable from fraud. The British Pharmacopœia, 1914,[3] has been so recently reviewed in these columns that it is not necessary to make further allusion to it here.

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[1] THE LANCET, July 25th, 1914, p. 239.
[2] THE LANCET, July 11th, 1914, p. 108.
[3] THE LANCET, Oct. 4th, 1914, pp. 901 and 907.

HONOURS TO MEDICAL MEN.

The eventful year now closing has been fairly full of honours for the medical profession, and we are proud that one member of our profession has won the V.C. for a most gallant action, and that others have earned the Companionship of the Distinguished Service Order.

The New Year Honours.

Sir Christopher Nixon, a former President of the Royal College of Physicians of Ireland, and since deceased, was sworn of the Irish Privy Council. Sir T. J. Stafford, Medical Commissioner of the Local Government Board in Ireland, received a baronetcy, and three knights were created, these being Surgeon-General Sir A. T. Sloggett, R.A.M.C., Director-General with the Expeditionary Force, Sir T. B. Nariman, physician to the Parsi Lying-in Hospital, Bombay, and Sir Harry Brookes Allen, professor of pathology and Dean of the Faculty of Medicine in the University of Melbourne. In the Royal Victorian Order Sir Rickman Godlee and Sir William Job Collins received the Knight Commandership. Major James Currie Robertson, I.M.S., Sanitary Commissioner with the Government of India, was appointed C.I.E. Surgeon-General Harold George Hathaway, Deputy Director of Medical Services in India, received a C.B. The Kaisar-i-Hind Gold Medal for Public Service in India was awarded to Dr. William Stokes, Dr. Marcus B. Carleton, and Dr. James Shepherd. Surgeon-General Arthur William May, C.B., Director-General of the Medical Department of the Navy, was appointed Honorary Physician to the King.

The Birthday Honours.

Eight new knights were created—namely, Sir Wilmot P. Herringham, Vice-Chancellor of the University of London; Sir William Milligan; Sir Seymour J. Sharkey; Lieutenant-Colonel Sir Leonard Rogers, C.I.E., professor of pathology at the Medical College, Calcutta; Sir Joseph E. Godfrey, late surgeon-general and chairman of the Local Government Board, British Guiana; Sir Thomas George Roddick, late Dean of the Faculty of Medicine of McGill University; Sir T. P. Anderson Stuart, Dean of the Faculty of Medicine at Sydney University; and Sir Alfred E. Thomson, surgeon to the New Somerset Hospital, Capetown. In the Order of the Bath Surgeon-General Sir Arthur W. May received promotion to K.C.B. Dr. Frank G. Clemow was made a C.M.G. Lieutenant-Colonel W. R. Edwards, C.M.G., I.M.S., and Colonel Courtenay Clarke Manifold, I.M.S., received C.B.'s; and Lieutenant-Colonel W. Molesworth, I.M.S., Lieutenant-Colonel G. J. Hamilton Bell, I.M.S., and Major E. D. Wilson Greig, I.M.S., assistant director of the Central Research Institute, Kasauli, were made C.I.E.'s. Major Charles E. Southon, I.M.S., was awarded the Kaisar-i-Hind Gold Medal, Dr. E. D. Rowland, resident surgeon at the Public Hospital, Georgetown, British Guiana, was appointed to the Imperial Service Order, and Dr. Harold Robert Dacre Spitta was appointed M.V.O.

The Victoria Cross.

In the first list of nine officers and non-commissioned officers to whom the Victoria Cross was granted for conspicuous bravery while serving with the Expeditionary Force appeared the name of Captain Harry Sherwood Ranken, R.A.M.C., who died at Braisne on Sept. 25th from wounds received in action. Captain Ranken was awarded the Victoria Cross "for tending wounded in the trenches under rifle and shrapnel fire at Hautvesnes on Sept. 19th, and on Sept. 20th continuing to attend to wounded after his thigh and leg had been shattered."

The Distinguished Service Order.

Among the officers of His Majesty's army who received Companionships of the Distinguished Service Order, in recognition of their services with the Expeditionary Force, were six members of the Royal Army Medical Corps—namely, Lieutenant Henry Beddingfield, for coolness and daring in repeatedly superintending removal of wounded from the firing line under heavy fire; Major Sidney George Butler, for coolness and courage in continuing all day to collect wounded under severe shell fire; Captain Malcolm Leckie (deceased), for gallant conduct and exceptional devotion to duty in attending to the wounded at Frameries, where he was himself wounded; Captain James Stuart Dunne, who during a German attack on Oct. 31st, near Messines, established a dressing station just behind the trenches, and was the means of saving many lives, he himself going several times into the trenches to attend to wounded men who could not be moved; Captain Sidney John Stewart, who went with a party of stretcher-bearers across ground swept by rifle and shell fire to Langemark village and removed 11 wounded men; and Captain Patrick Sampson, who showed frequent and conspicuous gallantry throughout the campaign, especially on Oct. 21st and 22nd, attending wounded men under very heavy shell fire.

The Legion of Honour.

The President of the French Republic bestowed the decoration of the Legion of Honour on the following officers of the Royal Army Medical Corps for their gallantry during the military operations between August 21st and 30th:—*Croix d'Officier:* Major S. L. Cummins. *Croix de Chevalier:* Captain S. E. Lewis, Captain J. T. McEntire, and Captain H. S. Ranken. The latter, as noted above, also received the posthumous honour of the V.C.

Foreign Orders.

During the year Captain R. J. C. Thompson, R.A.M.C., received the Imperial Ottoman Order of the Medjidieh (Fourth Class), as did also Captain Colin Cassidy, R.A.M.C., and Captain William Edward Marshall, R.A.M.C.

GENERAL MEDICAL COUNCIL.

The General Council of Medical Education and Registration commenced its summer session on May 26th, when Sir Donald MacAlister was heartily congratulated on recovery from his late illness. The session lasted five days, and was a quiet and businesslike one. Various steps forward in securing reciprocity between this country and the colonies and India were taken. Approval of the Midwives (Scotland) Bill was expressed and other matters which occupied the attention of the Council were the inspection of examinations and the proofs of the British Pharmacœpia (1914). A cycle of inspection of the qualifying examinations held by the several licensing bodies was decided upon for 1915, but owing to the war the plans made were afterwards modified. The winter session, the hundredth session of the Council, commenced on Nov. 24th, lasted three days only, and was mainly taken up in the consideration of penal cases.

BRITISH MEDICAL ASSOCIATION.

The eighty-second annual meeting of the British Medical Association was held in the University city of Aberdeen, under the presidency of Sir Alexander Ogston, in the last week of July, on the eve of the war, but before anything happened to mar the proceedings. At the annual Representative meeting, which commenced its proceedings on July 24th, a proposal was accepted, for reference to the Council, to consider what steps were necessary to secure that the British Medical Association should become a federation of medical bodies formed for the purposes of special sections of the profession. The Representative Body at the same time reaffirmed its support of the State registration of nurses, and instructed the Council to confer with the British Dental Association as to the best means of combating the evils of unregistered dentistry. The question of forming a special fund to protect the interests of the profession, and the correlated question of whether the fund should be administered by a trust or a trade union, was discussed and it was decided to follow the former policy. In regard to National Insurance the principle was laid down that public money received for treatment in voluntary institutions should belong to the medical staffs to be disposed of as they decided.

A second trial of the action for libel, brought by Mr. C. H. Stevens against the Association, ended with a verdict for the Association, whose action in denouncing the methods of a remedy-monger met with the approval of all medical men, and has now been endorsed by a jury.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA.

The fifth annual session of this Congress was held in London at the end of July, when a large number of surgeons from all parts of the world, some of them of international reputation, attended what proved to be a very successful and well-organised meeting. Owing to the obvious approach of war, even when its extent could not be foreseen, many of the foreign members of the Congress hurried back to their respective countries before the termination of the proceedings, and the anxiety of some of our American visitors in regard to the contingencies of their homeward voyage curtailed a great many intended visits. All the large general and special hospitals in the metropolis held special clinics for the benefit of the members of the Congress, and the discussions and friendly interchange of opinions showed that the surgery of this country was well abreast of the times from a general point of view. Lessons in special procedure were, however, received by us, and, it is hoped, were also given.

HOSPITAL FUNDS.

Voluntary contributions to hospital charities have not suffered to the extent which might have been expected; the drain on the charitable public this year in consequence of the war has been nobly met.

Metropolitan Hospital Sunday Fund.

Notwithstanding adverse influences, the income of this fund has been maintained. At the annual meeting of constituents, which was held on Dec. 22nd at the Mansion House, it was announced that this year's collection has resulted, under the presidency and treasurership of Sir T. Vansittart Bowater, in a total of £65,400 16*s.* 9*d.*, an increase of £409 compared with last year. The total receipts are made up of £28,700 from congregations, and £36,700 from legacies, donations, and dividends. The Distribution Committee recommended awards to the general and special hospitals, convalescent homes, dispensaries, and nursing associations, amounting to £59,403.

King Edward's Hospital Fund for London.

At a meeting of the governors and general council of King Edward's Hospital Fund held on Dec. 16th at St. James's Palace, it was announced that £140,000 would be distributed among various hospitals, convalescent homes, and consumption sanatoriums. Through Lord Stamfordham the King expressed the hope that the pressing needs of the voluntary hospitals would not be lost sight of during the present crisis. Up to Dec. 12th £370,856 were received on capital account, and on general account after payment of expenses £133,706. The report of the Distribution Commttee, which was presented by Sir William Church, stated that the governors and general council had this year fixed the sum available for distribution amongst the London hospitals at £133,500, as compared with £151,000 distributed in 1913. The Distribution Committee had nevertheless been able to recommend an increase in the total grants to maintenance—£121,150, as against £115,350 last year.

Hospital Saturday Fund.

From Jan. 13th to Dec. 12th the income of this Fund amounted to £20,170, an increase of £251 as compared with a corresponding period of last year. The accounts for 1914 will not be closed till Jan. 11th, 1915.

THE WAR.

The war has naturally occupied a large amount of our space during the last five months of the year, and a great many articles and paragraphs of medico-military interest have been published. For the convenience of our readers we may briefly mention those communications which attracted most attention at the time, or to which future reference is most likely to be made when the medical history of the war comes to be written.

Gun Deafness and its Prevention, W. Jobson Horne, August 15th. Antityphoid Inoculation in the Army, W. B. Leishman, August 22nd and Sept. 26th; G. Dreyer and E. W. Ainley Walker, August 29th; J. J. Graham Brown and F. M. Caird, Sept. 12th. Sterilisation of Water-supplies, G. Sims Woodhead, Sept. 19th. Open-air Hospitals in War Time, Robert Saundby, Sept. 19th. Improvisation of Apparatus in Fractures in Modern Warfare, J. H. Watson and T. Snowball, Sept. 26th, Oct. 3rd and 10th. Sterilisation of Potable Waters, J. C. Thresh, Sept. 26th. Ambulance Work in France, James Donelan, Oct. 3rd. Transport of the Wounded in War, E. Kondoleon, Oct. 10th. Wounds of the Present Campaign, G. H. Makins, Oct. 10th and 24th. Shell Wounds in Naval Warfare, B. Pick, R. A. Rankine, and J. Lambert, Oct. 24th. Traumatic Tetanus, M. H. Gordon, Oct. 31st. Surgical Lessons of the War, D'Arcy Power, Nov. 7th. Problems of Gunshot Fractures, E. W. Hey Groves, Nov. 14th. Treatment of Wounds in War, W. Watson Cheyne, Nov. 21st. Wounds during the Fighting in Flanders, G. H. Makins, Nov. 21st. Position of Belgian Doctors and Pharmacists, C. Jacobs, Nov. 21st. Bromidrosis, T. H. C. Benians, Dec. 5th. Wounds Produced by the Modern Bullet, G. H. Makins, Dec. 12th. Germicidal Action of Colloidal Silver, W. J. Simpson and R. T. Hewlett, Dec. 12th. Treatment of Wounds in War, Anthony Bowlby, Dec. 19th. Our Army's Teeth, F. NEWLAND-PEDLEY, Dec. 19th.

Discussions at the Medical Society of London on Surgical Experiences of the Present War, and on Treatment of Tetanus were reported in THE LANCET of Nov. 21st and 28th and Dec. 12th.

The outcome of all the communications which we have received, as well as of those which have been published, is decidedly satisfactory as regards the general health of our own troops. The incidence among them of infectious disease has been small, almost infinitely smaller than some of the gloomier forecasts, and the treatment of the wounded has been undertaken in a systematic manner as soon as the military conditions of the campaign made this in the least possible. The work of the Royal Army Medical Corps has been splendid, and the public coöperation generous and, as a rule, remarkably effective. The heroic remnant of the Belgian army has been sorely tried by sickness, as was only to be expected when the conditions under which it has struggled so fearlessly for nearly five months are recalled. Behind the vastly extended lines of our French Allies the number of sick has been in certain districts large, but the grave dangers of widespread infection have been met by strenuous organisation and personal devotion. Sufferings which no words can describe have been endured, and remain for endurance, but from the medical point of view the story is satisfactory and the outlook hopeful.

Annotations.

"Ne quid nimis."

THE ORIGIN AND NATURE OF GRANULAR AND HYALINE RENAL CASTS.

THERE is a well-known disparity of opinion with regard to the origin and composition of renal casts. Rovida and Padoa consider granular casts the products of a secretion of altered epithelial cells in the renal tubes, while Senator and Olivero believe that they originate by a process of transformation of necrosed epithelium. Hyaline casts have been regarded as a product of epithelial secretion or as formed by albumin exuded from the glomeruli and coagulated in the tubules. An experimental note on the subject has just been published in *Il Policlinico* for Nov. 29th by Dr. Cesare Minerbi, who has availed himself of a new method of staining urinary sediments discovered by W. Vecchiati by using Pappenheim's solution. By this process the epithelial cells of the tubules, whether free or as epithelial casts, take a bright sky-blue tint, faintly violet in the protoplasm, reddish purple in the nucleus which is clearly mapped out. Granular casts also are coloured blue with a more or less tendency to violet. They show here and there included epithelial cells from the tubules, with their marked characteristics, although more or less altered, inasmuch as the protoplasm does not change colour, and the nucleus, although undergoing a chromatolysis more or less advanced, is perfectly recognisable. In sediments where there is a large quantity of granular casts it is easy to follow the phases of transformation from epithelial to granular casts. The process seems to be as follows. The cells fuse and agglutinate their protoplasm, the nucleus becomes a prey to chromatolysis, and disintegrates, its fragments being disseminated throughout the protoplasm and gradually dissolved. Such fragments assume under the staining described a colour no longer purplish but tending to yellowish brown. In this manner is produced a granular cast, formed in substance from the protoplasm of the epithelium of the tubules and containing granules which are partly nuclear detritus and partly derived by the "lysis" of the protoplasm. Hyaline casts only in rare instances take a faint pink stain; for the most part they remain absolutely colourless and there is never any evidence of any trace of nuclear débris. Commenting on this fact, Dr. Minerbi is of opinion that hyaline casts are derived from blood casts, the red cells of which lose their hæmoglobin under the influence of the hypotonic solvent action of the urine.

Dr. F. Gowland Hopkins, F.R.S., university reader in chemical physiology, has been elected to the newly constituted professorship of biochemistry in the University of Cambridge.

DONATIONS AND BEQUESTS.—Among a large number of charitable gifts left by the late Miss Julia Crokat are £1000 each to St. Mary's Hospital, the Hospital for Sick Children, Great Ormond-street, and £500 each to the British Home for Incurables and to the Royal Hospital for Incurables.—The Royal Dental Hospital, Leicester-square, has received a donation of £1000 from Mr. Somerset Beaumont.

CENTRAL MIDWIVES BOARD.—A special meeting of the Central Midwives Board was held at Caxton House, Westminster, on Dec. 15th, Sir Francis H. Champneys being in the chair. A number of midwives were struck off the roll, the following charges amongst others having been brought forward: Not observing the antiseptic precautions prescribed by Rules E. 3 and 7; persistently neglecting and refusing to give reasonable facilities for the inspection by the local supervising authority of the register of cases, bag of appliances, and place of residence, and an investigation of the mode of practice, as required by Rule E. 24. Neglecting to adopt the antiseptic precautions required by Rules E. 3 and 7, and to take and record the pulse and temperature of the patient, as required by Rule E. 13. Medical aid having been sought, the midwife neglected to notify the local supervising authority thereof, as required by Rule E. 21 (1); not being scrupulously clean, as required by Rule E. 1; not cleansing the eyelids of the child in accordance with Rule E. 15, and being unable to take the pulse or temperature of patients, and in consequence being unable to comply with Rule E. 13. That being in attendance as a midwife at a confinement and the child suffering from inflammation of and discharge from the eyes, the midwife did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (5). The midwife attending a confinement not wearing a clean dress of washable material, as required by Rule E. 1, and not taking to the confinement the appliances and antiseptics prescribed by Rule E. 2.—At a meeting of the Board at Caxton House, on Dec. 17th, Sir Francis Champneys being in the chair, a letter was considered from the Secretary of the Association for Promoting the Training and Supply of Midwives transmitting for the information of the Board returns obtained by the association from local supervising authorities as to the difficulty experienced in obtaining the services of a registered medical practitioner when summoned in emergencies on the advice of a midwife. The Board directed that the association be informed that the Board sympathises with it, and has repeatedly urged the necessity of securing the payment of medical practitioners when summoned to cases in charge of midwives, and that the Board will use its endeavours at the proper time to get such a clause passed, and further suggests that the association should use their influence to get an amending Bill passed as soon as possible.

STRETCHERS FOR THE WOUNDED IN THE TRENCHES.

By G. K. Aubrey, L.M.S.S.A. Lond., L.R.C.P. Irel.,
CAPTAIN, ROYAL ARMY MEDICAL CORPS (SPECIAL RESERVE).

The official pattern of stretcher is often useless as a means of transporting the wounded through the trenches, not only because of its breadth, but particularly also of its great length. Here is the official description of the army pattern now in general use, taken from "R.A.M.C. Training":—

> In Mark II. stretchers the canvas, which is tanned, is fastened to the pole by copper nails through an edging of leather; the poles are square and kept apart the required distance by two flat, wrought iron, jointed bars called traverses, and are fitted on the under side with steel U-shaped runners. A pillow and a pair of shoulder-slings are provided with each stretcher. The pillows are wedge-shaped, varying from 1½ to 3½ in. in thickness. There are eyelet holes in the canvas of the stretcher at both ends for the attachment of the pillows by thin leather thongs. The sling, which is of tanned web, has at either end a loop, one of which is furnished with a brass grip-plate, by means of which the sling can be lengthened or shortened; at the opposite end is a narrow, transverse strap fixed at right angles, which is buckled round the stretcher when closed.
>
> The dimensions of Mark II. stretchers are: Length, canvas, 6 ft., pole, 7ft. 9 in.; width, total, 1ft. 11 in.; height, 6 in.; weight, 30 lb.; tonnage for freightage, without pillow 0·0364 ton, pillow only 0·015 ton.

The breadth of Mark II. cannot be lessened because of the iron "traverses" which keep the poles a fixed distance apart, and though it is true that in places the width of trenches is enough to admit of its passage and of the men passing it in the opposite direction, the length of this stretcher is an absolute bar, for a trench twists and turns and doubles constantly upon itself in U-shaped curves, along which it simply cannot be taken. Consequently, removals from the trenches to the Regimental Aid Post have to be effected at night under cover of darkness, the bearers lifting the man out of the trenches altogether, and at considerable risk to him and to themselves conveying him across open country and taking chances that none of the stray bullets and ricochets which are flying about at all hours will find a billet in any member of the party.

If the soldier is hit in the morning and cannot walk he is compelled to wait till night, lying long hours in a "dug-out" or some corner out of the way; and it must be obvious that a great many cases would be much better off if they could be got down without delay, through and under cover of the trenches.

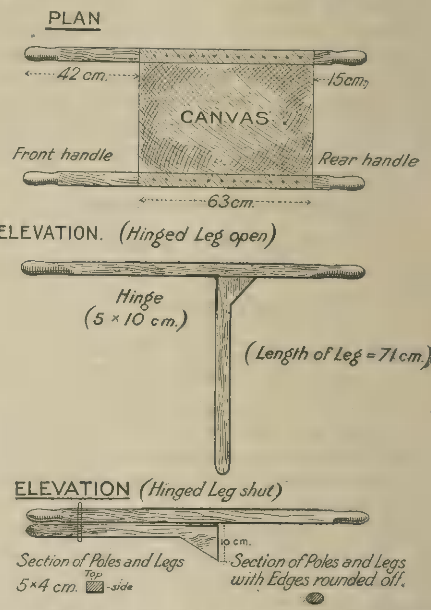
This is the *raison d'être* of the short Fusilier trench stretcher, which is described and figured below. The one which I made, with the skilful assistance of Bandsman W. H. Ayres, Royal Fusiliers, has proved of much service from the start, and several have since been made by the Royal Engineers and are now in use in the brigade.

The total length of this stretcher from end to end of pole is only 120 cm. (4 ft.), its width 52 cm. (20½ in.). In front of the canvas, which is 63 cm. long by 52 cm. wide (25 in. by 20½ in.), the poles extend 42 cm. (16½ in.), while in rear they merely form handles 15 cm. (6 in.) long. To the under surface of the poles—which are 5 cm. (2 in.) wide by 4 cm. (1½ in.) thick—a leg of the same dimensions and 71 cm. (28 in.) long is attached by a hinge the width of the pole and leg, and 10 cm. (4 in.) in length, at such a distance from the front end of the pole that when the leg is folded forwards underneath the latter the ends of the leg and of the pole shall be flush. (The dimensions in inches are approximate.)

The comparative dimensions of Mark II. and the trench stretcher are accordingly as follows:—

	Mark II.	Trench.
Length of pole	7 ft. 9 in.	4 ft. 0 in.
,, canvas ...	6 ft. 0 in.	2 ft. 1 in.
Width, total...	1 ft. 11 in.	1 ft. 8½ in.
Height	0 ft. 6 in.	0 ft. 4 in. (with leg folded; 2ft. 8½ in. with leg down).

The shoulder slings of Mark II. stretcher are used with the trench stretcher, and its pillow, as a cushion, is placed longwise on the canvas between the poles. The patient is seated on the canvas, his head and back resting against the breast of the rear bearer, whilst his feet hang just clear of the front bearer's legs. The strap shown as tying the folded-up hinged leg to the pole can be used to sling loosely and give support to one or other of the patient's legs without appreciable inconvenience either to him or the front bearer. If necessary, a bandage or strap may be passed in front of the patient's chest and attached on either side to the shoulder sling which goes from the rear bearer's shoulders to the handles. When carrying a man the hinged legs hang from the poles, and are so placed as to take the weight of the patient evenly if the bearers lower the stretcher a little to rest or change, and very little effort is needed to hold the contrivance steadily balanced.



Diagrammatic sketch of Captain Aubrey's "Fusilier" trench stretcher. Total length, 120 cm.; total width, 52 cm.; canvas seat measurement, 63 × 52 cm.

In conclusion, the stretcher I have devised and described does not profess to replace or to be in any way an improvement on the army pattern, Mark II., where such can be used, or to be a perfect specimen of its particular kind. I have no doubt that it can be greatly improved, and sincerely hope that suggestions to enhance its value will be made by some of those who read this article.

A FATAL CASE OF POISONING BY TETRACHLORIDE OF ETHANE.

ON Saturday last, Dec. 19th, Mr. Luxmore Drew and a jury resumed an inquiry into the cause of death of an employee at an aeroplane factory, when highly interesting scientific evidence was given in accordance with which the verdict was returned. The deceased died in the wards of the hospital where he had been taken after becoming ill at the factory, and evidence was given by the Aircraft Manufacturing Company, the proprietors of the factory, describing the procedure of applying "dope," this being the work which was presumed to have led to the condition. From the evidence it was obvious that there had been a considerable number of cases of sickness, in some of which jaundice was present, while it was also evident that the "doping" was attended with considerable smell. A member of the firm which manufactured the "dope" said that the factory contained draught fans to remove the fumes and gave other evidence of proper care for the operatives. They were, he said, on the look out for a new factory, otherwise the installation of fans would have been made several months previously. Mr. John Chapman, the sanitary inspector of Hendon, and Mr. F. W. Andrew, the medical officer of health of Hendon, both gave evidence, which, as far as it went, showed that sanitary precautions had been taken in the factory.

Evidence as to the Nature and Effects of Dope.

Dr. William Henry Willcox deposed that he was one of the physicians of St. Mary's Hospital and official analyst to the Home Office. He had prepared a report on this case of Gilbert Moody, deceased. On Nov. 5th last he carefully examined Moody at the out-patient department of the hospital, and found him suffering from jaundice, which was said to have existed 14 days, and he had had sickness and nausea in the mornings, his stools had been pale and the urine dark brown in colour. There had been slight pain in the upper abdomen. He mentioned that he had been using dope at the Hendon aeroplane works; deceased's own view was that dope was made of collodion, chloroform, ether, and acetone, and he said that ten other men had also complained. Patient had a temperature of 99·6°, pulse 96; liver enlarged, no sign of anæmia, no sign of alcoholic excess, nor of gall-bladder disease. The diagnosis he made was jaundice due to the action of some poison on the liver. He thought it probable that some constituent of the dope used was responsible for the illness. He did not see the patient again. On Dec. 4th he received from the coroner's officer specimens of material. The first was marked A by Dr. Willcox; it was an 8 oz. bottle, corked, sealed, and labelled "Dope from Aircraft works, Hendon, in case of Gilbert Moody, G.W. 26/11/14." The other was marked B, and was a 5 oz. corked bottle labelled "Dope from Aircraft works, Hendon, in case of Gilbert Moody, 2/12/14." Their contents he found to be a solution of compound of cellulose in a mixture of methylated spirit, acetone, benzene, and tetrachloride of ethane. He distilled some of the dope, and found that the bulk of the liquid of the dope distilled over between 63° and 80° C. The liquid was volatile. The vapour it yielded on evaporation was 1·91 times as heavy as air. On Dec. 4th he made a personal examination of the Hendon premises with Dr. T. M. Legge, of the Home Office. Mr. Pettit, manager of the factory, afforded him every facility for the inspection, and gave him the fullest information on every point, for which he felt greatly indebted, since the information so given greatly facilitated his investigations. He was at once struck by the manner in which the dope vapour hung about; even at a distance of 30 yards from where the dope was being used one would walk into air strongly impregnated with the vapour; this was explained by its density being twice that of air; heavy vapours mixed only slowly. The ventilation of the building was by the "plenum" system, a very good system for ordinary ventilation, but not for heavy vapours such as dope vapour. On Dec. 5th he received from Dr. Legge samples of each of the respective liquid constituents of the dope varnish, in separate bottles. They were benzene, acetone, methylated spirit, and tetrachlorethane. He decided to make careful animal experiments in order to determine if any of these constituents of dope was likely to cause harmful effects on the liver. White rats were selected as being the most suitable animals. For each experiment a glass chamber was selected, in the bottom of which was placed daily one-third of an ounce of the liquid to be tested. A perforated platform was put across the middle of the chamber, and on this the animal was placed, the upper part of the chamber being covered with a perforated zinc roof. The animals were kept in the glass chambers eight hours per day for a week. The liquids separately tested were dope, tetrachlorethane, acetone, benzene, and methylated spirit. The rats after being kept in the dope vapour and those kept in the tetrachlorethane vapour became drowsy, and remained drowsy for some time after removal. More than an hour after removal elapsed before they fed and became active again, but they did not gain in weight during the week's treatment, as did the other animals. In the acetone experiment the animal was drowsy while in the vapour, but on removal it became lively and normal, and gained weight. In the benzene experiment the animal was drowsy, but was normal on removal, and gained in weight. The animal placed under the influence of methylated spirit was not adversely affected. After seven days' treatment the animals were killed. Post-mortem examinations on them were made by Dr. B. H. Spilsbury and himself. The tetrachlorethane rat showed marked changes in the liver to the naked eye—signs of fatty degeneration and bile staining. The dope rat showed liver changes similar to the preceding, but less marked. In the benzene, acetone, and methylated spirit experiments no changes were seen by the naked eye in the organs of the animals. Dr. Spilsbury made careful microscopical specimens of the organs of the rats, and he had examined the specimens with him. In the rat exposed to tetrachlorethane vapour very marked fatty degeneration and cloudy swelling were present in the livers and kidneys. In the rat exposed to dope vapour marked fatty degeneration and cloudy swelling were present in the livers and kidneys, exactly similar to the changes caused by tetrachlorethane, but not quite so advanced. In the rats exposed to the vapours of acetone, benzene, and methylated spirit respectively no fatty degeneration or cloudy swelling was present; liver and kidneys were normal.

Dr. Willcox had had other experience of a tetrachloride of ethane; he worked at it five years ago in connexion with a shampooing mixture, but that was tetrachloride of carbon. The action of the two was very similar. These organic compounds ran in series, and the series above the tetrachloride of carbon was the tetrachloride of ethane. Five years ago he made experiments on tetrachlorethane simply as a matter of interest to himself, and at that date he formed the opinion that it was a powerful tissue poison. The experiments he had now carried out confirmed the opinion he formed in 1909; the latter work was specially related to dosage. He had the animals kept successively in air containing known percentages of vapour, and the effects from tetrachlorethane he found to be largely dependent on the dosage. In his opinion, air containing only a small trace of tetrachlorethane would not be harmful, but air containing appreciable quantities was harmful, especially if inhaled for long periods. He would not like to commit himself as to what percentage commenced to be harmful; if there was not sufficient in the factory to be smelt it would not be harmful, but he did not feel prepared to state the converse, that if the preparation could be smelt it was injurious. In answer to the coroner, he agreed that in the case of coal gas a proportion which would not be perceptible to the nostrils would be poisonous. He examined the microscopical work of Dr. Spilsbury, and found there was a remarkable destruction of the liver tissue, which might be a consequence of the preceding fatty degeneration. In the deceased the liver and gall-bladder were reduced in size, the former weighing only 34½ oz., and there was a condition of subacute hepatitis. It was the result he would expect from the fumes, especially after exposure during weeks, because these liver changes and shrinkages of cells required time to become established. Asked by the coroner whether removal from the work for a time would cause the effects to cease in the man, he replied that it would not necessarily, because the exposure already undergone might have so damaged the liver cells that they would die and their place be taken by fibrous or scar tissue. That took place in the liver of Gilbert Moody. A man who had only slight fatty degeneration of the liver cells would probably recover if removed from the vapour. It was a question of dosage. The sequel of long exposure to the vapour would be cirrhosis of the liver. From having seen the man Moody at hospital, and from the experiments he had made and his examination of the microscopical sections, he did not doubt that the cause of death was heart failure consequent on degeneration of the liver caused by tetrachlorethane present in the cellulose varnish used by Moody, and to which he was exposed during life. He had investigated the other cases of illness at the works, and had carefully examined nine of them, eight at St. Mary's Hospital and one at the man's home. The symptoms were common to all.

The coroner asked for a statement of those symptoms because of the importance of the matter and the guide which they would be to those engaged in the industry. Dr. Willcox replied that the symptoms were drowsiness while at work, loss of appetite, nausea, vomiting, headache, a peculiar taste and an irritation at the back of the throat, jaundice, with pale stools and high-coloured urine, generally constipation, but no anæmia. If the men complained of being "run down" it would not be because of anæmia. In a few of the cases the patients became delirious and severely ill. In one case there was conjunctivitis without ulceration. In several cases the symptoms disappeared, but on returning to the work they speedily returned and were in an aggravated intensity. One of the patients was very ill at the present time; there was severe dropsy of the abdomen owing to the shrinkage of the liver. When at the aeroplane factory he, Dr. Willcox, had a chat with many of the workers, some of whom he found to be suffering from unmistakable symptoms of commencing dope poisoning. They were not jaundiced, but they had loss of appetite, nausea, and a tendency to sleepiness. He believed the case of Moody was the first one which had drawn definite attention to the danger connected with dope. He believed the illness could be entirely avoided by making proper arrangements. That, however, was a matter for the Factories Department. He did not think the deceased would have died if he had not been engaged in this particular work; he did not regard the death as a natural death. Asked as to the influence of age on the symptoms, he said he could give the ages of the patients, but was not prepared to say what the influence was. Owing to the density of the vapour he would expect a man of short stature, such as the deceased, to be more affected than a tall man. He was sure the illness under inquiry was not catarrhal jaundice. A patient with catarrhal jaundice was only mildly ill; he was yellow, but felt well; his pulse was slow and temperature normal.

Answering Mr. O. Osborne, appearing for the British Emalite Company, Dr. Willcox said he believed tetrachloride of ethane was used in rubber factories, but he had not encountered cases of poisoning by the substance until this one. Asked as to the injurious effect of leaving open tins of dope about the factory, he said it was not a question of open tins, but of having the substance spread over a large surface; it would not evaporate very quickly from tins. If proper precautions were used to get rid of the vapour, it would be safe to use dope. Now that the cause of the trouble was known, he believed it could be removed. Dr. Legge would speak with better authority as to the means. It was not only people who actually used dope who were taken ill, but men working at a distance off were affected also; the vapour spread. Three men were taken ill who were working 60 or 70 yards from the doping. These were mild cases. When walking along one suddenly encountered a cloud of the vapour, as detected by the smell. Answering Mr. Cousins, a factory inspector, he said the tetrachlorethane would be the least volatile of the dope constituents; its boiling point was 147°. Mr. Cousins also asked whether the poison would be more in evidence in proportion as it dried. Dr. Willcox replied that he had thought so, but he did the distillation, and was not sure that it was so. He tried to separate the tetrachlorethane by fractional distillation, but found the vapours went over together. The proportion of tetrachlorethane was something like 10 per cent. The fumes given off from the dope consisted of a uniformly mixed vapour. In answer to the foreman of the jury, he agreed that a fan placed in the ordinary way would have but little effect in clearing away this heavy vapour; it would be necessary for doping to be done in a separate chamber with separate fans.

Evidence as to the Conditions in Works and Preventive Measures.

Dr. T. Morison Legge, Inspector of Factories, Home Office, spoke of having visited the factory twice—namely, on Dec. 2nd and two days later with Dr. Willcox. He found that the premises, originally an omnibus depôt, had been adapted to the present purposes in the early summer. He produced a plan. He could not state the exact superficies, but it would be about 60 or 70 yards by a little more in length—a very open shed, not divided off, but all open to the same atmosphere. There was a double-ridged roof, and glass all along the roof, from which the principal light was obtained; there were windows on the side wall and openings in the end gables. There was a natural system of ventilation arranged for by three lantern louvred openings in each of the ridges. Mechanical ventilation was arranged for on the "plenum" system—i.e., a high-pressure fan driving air which had been warmed into the factory along well-defined tapering trunks, with subsidiary branch ducts at intervals, so distributing the warm air all over the factory. At the time of his visit, however, it had broken down and was not running at all, and he understood that this was not the only occasion on which it had been defective in that respect; it had not been by any means always running. The system was good under ordinary circumstances, but for drawing these fumes away it was thoroughly bad. Preferably the doping area should be shut off from the rest of the room, with adequate inlets to supply volumes of air to replace that drawn off. He considered that this would obviate the danger from the fumes. He wished to utter a caution: that this volume of air mixed with inflammable vapours, such as acetone, might form an explosive compound, and this might be set alight if sparking were possible from an electric fan. Therefore the motor driving the fan would have to be explosion-proof. Or the connexions with the fan could be placed outside. Tetrachloride of ethane in itself was non-inflammable, but he could not say what would be the effect on the varnish for aeroplane wings of removing the tetrachloride of ethane; that was a technical point. The Factory Act provided that if a material had been proved to be dangerous, the Secretary of State had power to take certain steps: either to prohibit its use in the factory, or to take such measures as would remove the danger. The Factory Department would certainly see into the matter.

In answer to the coroner, Dr. Legge said he considered that for the 400 men employed there was very insufficient sanitary accommodation, and he thought that predisposed to some extent to this condition. There were but four sanitary conveniences available for the 400 men; and when he went into the vestibule of the lavatory he found quite ten men awaiting their turn. Such interference with bodily functions would predispose to a greater effect of the poison. He agreed that personal idiosyncrasy would play a part, but this was in the region of surmise, and he did not think the point could be pressed too closely. Apart from jaundice, a certain number of the men had been suffering from gastric disturbance; and he understood that a number had left, without giving any reason, because they found it disagreeing with them. He noticed an odour immediately on entering the main gate, and this was much more marked where the doping was in progress. Quick drying was the great object aimed at. Asked whether he found the people in the factory were generally in a healthy condition, he replied in the negative, for when questioned a history of gastric attacks was elicited from several. Some of the men looked decidedly run down. He visited the factory of the Emalite Company, and there was very little smell indeed at the time of his visit; the air seemed fresh, and his attention was called to the volume fan placed in the wall at a height of about 12 feet. The three men employed were quite healthy. But the mixing was carried out in closed-in drums, so all the exposure the men got was in transferring the ingredient from the drum into a jug and putting that into the revolving mixer. The ingredients were made elsewhere. He visited the factory where the substance was manufactured some years ago because it was a new and important industry. He was told by the person in charge that the substances were narcotic in their action, but not toxic. He did not find in the factory at that time evidence of injury. Subsequently complaint was made of the effects where certain compounds similar to tetrachloride of ethane were used, and last summer one of his colleagues investigated an illness attributed to their effect. No jaundice was noticed by him. This aeroplane industry was the first he had known in which the tetrachloride of ethane was used. But they had come across other and analogous compounds used for dissolving fat out of seeds, but not tetrachloride of ethane. In the similar kind of case referred to partial unconsciousness was caused, but not jaundice. He received from Mr. Pettit the names of 16 men at the Aircraft factory and their addresses, and he tried to see as many as he could in different parts of London. He also saw their medical men, and in that way he arranged for six of those men to go to St. Mary's Hospital to be examined by Dr. Willcox. He had visited other premises where other substances were used for a similar purpose. They were mixed in much the same way as described but practically in the open air, and there was no evidence of illness among the men who did the mixing. He had visited seven aeroplane factories besides the Aircraft one. In one the evidence he received satisfied him that a man whom he did not see was suffering in the same way as the cases he had seen in London. In another factory, where the work was largely done by young women and girls, he examined 16 or 17, and found that one had been away this year for jaundice and congestion of the liver. She had unmistakable evidence of the effect of dope. In most of the cases he had referred to the dope used was a different one, but he believed the ingredients were much the same.

He agreed with Dr. Willcox that without the tetrachloride of ethane there would have been no effect, he said the other vapours present would cause headache and some giddiness, but he would not have expected jaundice to be caused. In none of the other factories he visited were the conditions quite the same as at the Aircraft; the others had the doping done in a partitioned-off apartment. At the factory where he found the least effect more attention had been paid to ventilation than in any other; they had no fans, but four wide Tobin's tubes, and they kept the windows open; they also had ventilation through the ceiling. But there was not nearly as much dope used in them. One shed had been built specially high to allow of the escape of the fumes, in ignorance of the fact that the fumes were twice the weight of air. That there was not serious illness at the Aircraft factory before September he thought was because the employees had not had sufficiently big doses; moreover, it required some time for the symptoms to develop; in this fatal case six weeks. One case he discovered dated back to last February.

Asked what he suggested in order to render doping safe, he recommended that the doping should be done at one end of a shed, in a portion which had been partitioned off from the remainder of the building; that the fume should be removed by volume fans placed near the ground level, protected against possible sparking, and that there should be efficient inlets opposite to where the fan was working; also that no man should be working between the fan and where the doping was being carried on. He thought that none of the men should be allowed to eat their meals in the room where doping was done. In the other places he had visited either mess-rooms were provided on the premises or the doping room was locked up during meal times. He did not think the wearing of respirators would be practicable. Similarly impracticable perhaps was the suggestion that the men engaged in doping should, like firemen, wear a helmet into which air could be forced from the outside. Of course, if some substance could be substituted for the tetrachloride of ethane, so much the better. The process was dangerous as carried out by the Aircraft factory. He agreed that if a man was early affected and was removed, the effects would pass away. He would not say that a man who had once been affected at the works with jaundice should never go back; but he must wait until his recovery was complete. The girls engaged in the work, he had noticed, had a very bright complexion, which was commonly regarded as a sign of robustness; hence it might be deceptive and result in the premonitory symptoms not being suspected. He agreed as to the cause of death in the case of Moody, but without the evidence of Dr. Willcox he could not have said what constituents were harmful.

Dr. Bernard Spilsbury said that what Dr. Willcox found in the case of the man Moody had confirmed his previous opinion that the liver was the seat of advanced hepatitis, and the other organs were healthy apart from secondary changes due to the toxic condition. The investigation had not only confirmed but had enlarged his previous opinion.

The Coroner thanked the scientific witnesses for the clear light which they had shed on the case, and the jury, without retiring, returned a verdict in accordance with Dr. Willcox's conclusion: "Accidental death, caused by heart failure, consequent on degeneration of the liver caused by tetrachloride of ethane present in the cellulose varnish dope, to the vapour of which he was exposed during life at the Aircraft works, Hendon." The foreman said the jury wished him to express their thanks to Dr. Spilsbury and Dr. Willcox for the interesting evidence which they had given, and they hoped the investigation would be the means of preventing further deaths from occurring in this industry.

Public Health.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the Lodging and Accommodation of Hop-pickers, by Dr. REGINALD FARRAR.[1]—The writer of this interesting report has made himself a specialist in all matters relating to the conditions of life of navvies, fruit-pickers, pea-pickers, hop-pickers, and other classes of peripatetic labour, and his last addition to the Local Government Board Reports on these subjects gives a very complete description of the industry of hop-picking and the sanitary questions arising out of the influx of pickers into hop-producing areas in different parts of the country. Dr. Farrar had previously reviewed this industry in a report issued in 1907, and since then the Local Government Board has directed frequent inspections, and pressed the local authorities concerned to make bye-laws, particularly by inquiring at hop gardens before the season begins as to the sufficiency of the accommodation which will be available. Kent is, and has always been, much the most important of the hop-growing counties, but hops are grown also in Sussex, Hereford, and Worcester, while small areas are under hop cultivation in a few other parts of the country. The acreage under hops steadily diminishes, but this is in part compensated for by intensive methods which secure larger yields per acre. The yield of hops in different seasons is very variable, and a single year may often leave the grower with a heavy deficit, to be made up by large profits in a better year. Hop cultivation thus in these days requires capital, and smaller farmers and growers tend to get squeezed out of the industry. In some years the imports of foreign hops have constituted more than half the total supply available for the brewers, thus increasing the uncertainties of the trade. Much is now being done, however, by cold storage to enable the surplus of one year to be carried over to the next, and so steady the market. These considerations on the whole make it easier for the accommodation of hop-pickers to be improved. Measures can be expected of large traders which can hardly be followed by small farmers, and there is now evidence that those who neglect to look after their workers are finding an increasing difficulty in getting the labour they require. Few sanitary questions arise in those areas where the hop-fields are stripped by the local population, with the aid of friends whom they invite for the hopping season. The

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[1] Reports to the Local Government Board on Public Health and Medical Subjects. New Series. No. 99. London: Wyman and Sons, Fetter-lane. Edinburgh: H.M. Stationery Office. Dublin: E. Ponsonby. Price 6*d*.

"foreign" pickers, on the other hand, come to the hopfields in thousands from London and other towns; Dr. Farrar estimates them at about 70,000 "full" pickers and about as many young children annually. The London contingents include a higher proportion of men than those which are found in the western counties, where the great majority are women. Dr. Farrar controverts a popular belief that hop-pickers are the "lowest of the low"; he finds the "foreign" pickers generally an orderly, self-respecting class of people, often coming from decent homes, though clad in their worst garments for the occasion. He has a good word also for gipsy pickers. The habitual vagrants, on the other hand, who find their way to the hopfields are often a source of disorder and uncleanliness. They fill the casual wards of the Kent workhouses in anticipation of the hopping season and are a considerable burden on local rates, being only in demand by the farmer who wants people who will sleep and feed somewhere without his being troubled. The children of the "foreign" pickers probably get benefit to health in most cases, but as there are often no facilities for washing they sometimes return to towns in a very dirty or verminous condition, and in camps not properly scavenged they may suffer severely from diarrhœa. They suffer also from there frequently being no opportunity of drying wet clothes. Apparently hop-picking is not looked upon with favour by most educational authorities, though it may be noted that Dr. Mary Williams, reporting in Worcestershire at an examination of 500 children after the hop-picking season of 1911, considered they were in most cases much better physically for the change, and that the children who came back with body lice were generally children to be expected at any time to have body lice. If the educational authorities could extend their supervision of children so as to secure that they were visited and reasonably looked after they would probably do better by encouraging the taking of children hop-picking than by putting obstacles in the way. Dr. Farrar reviews in detail the accommodation now generally made for pickers in farm buildings, tents, and huts. It is curious to read that properly roofed pig-styes, if cleaned and whitewashed, are often in demand and are preferred by the pickers on account of the greater privacy which they afford when compared with large barns and outhouses. As a rule tents are undesirable; they are used by people who do not know how to manage a tent, they are seldom waterproof, and frequently families are closely herded together in them and lie on damp ground. It is unfortunate that under existing powers their use cannot be prohibited by bye-laws. By degrees a good class of hopper hut is being introduced into many hop gardens, and there can be no doubt of their superiority, provided that they are treated as places for short periods of occupation and not allowed to be used throughout the year as rent-free dwellings. Dr. Farrar makes various suggestions, such as the provision of a few shelves and pegs for hanging up clothes, the continuation of the roof to make a shelter in front of the huts, better window openings, and the like, which need only to be pointed out for their advantage to be apparent. Indeed, in this matter, as also with the remedies necessary to prevent bad food being hawked in the encampments, the provision of cheap cooking shelters, and similar questions, the report will be invaluable to those who are desirous to improve matters but do not know where or how to begin. It may be concluded from the report that the majority of growers and most of the local authorities concerned are anxious for such improvements, and it is to be hoped that the Local Government Board, by its inspections, and if necessary by giving greater powers to local authorities in the matter of bye-laws, will see that those who are considerate for the accommodation and health of the hop-pickers do not suffer by continuance of neglect on the part of those who are apathetic Really bad cases of insanitary hoppers' camps, places where there is no water-supply within a quarter of a mile, no scavenger, no cooking shelter, and only wet ground or floors to sleep on, ought to be dealt with by sharp measures. Hoppers cannot, perhaps, expect such a high standard of accommodation as the Government is giving to German prisoners, but at least the contrast need not be too marked.

SIR WILLIAM COLLINS has been elected President of the University of London Graduates' Association in succession to Lord Moulton of Bank.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet-Surgeon Frederick James Burns has been placed on the Retired List (dated Dec. 9th).

The following appointments have been notified:—Fleet-Surgeon: E. C. Ward to the *Pembroke*, for R.N. Barracks. Temporary Surgeon: J. G. Bailey to Hythe and for duty in Folkestone.

ROYAL ARMY MEDICAL CORPS.

Sir Alexander MacCormick is granted temporarily the honorary rank of Lieutenant-Colonel whilst serving with the Australian Medical Unit (dated Dec. 19th).

Major Frederic W. Lamballe is placed temporarily on the Half-Pay List on account of ill-health (dated Dec. 19th).

The undermentioned to be Lieutenant-Colonels:—Dated Nov. 27th: Major Hubert A. Bray (and to remain seconded) and Major Thomas McDermott.

The undermentioned to be temporary Lieutenants:—Dated Oct. 9th: John Leeper Dunlop. Dated Oct. 17th: Douglas Edward Crosbie. Dated Oct. 21st: George Whitfield Rea. Dated Oct. 29th: Winslow Seymour Sterling Berry. Dated Nov. 14th: Thomas William Gerald Hogg. Dated Nov. 16th: Samuel Patterson Rea. Dated Nov. 23rd: Norman Colum Patrick. Dated Nov. 26th: Norman Clotworthy Graham. Dated Nov. 28th: Thomas Grimson. Dated Dec. 1st: Alexander Harper Robinson Duncan. Dated Sept. 26th: Alexander Bremner. Dated Dec. 1st: John Hanson, James Jameson Dwyer, William John Fitzgerald Mayne, Mackenzie Douglas, John Cecil Lynmore Day, Timothy Meagher, John Douglas Cherry, Patrick Joseph Maguire, and Walter Eustace Adam. Dated Dec. 2nd: Charles Vincent Mackay. Dated Dec. 4th: Humphrey Meigh Stephenson, Arthur Leslie Harmsworth Rackham, William George Helsby, Norman Frankish Graham, Alexander Beck Cluckie, John Macarthur, William Hugh Brodie, Harry Morgan Gilmour, Henry Caplan, James Potter, and John Anderson. Dated Dec. 6th: Maurice Henry Whiting, Stephen Rowland, Colin King, Donald Duff, Frank Hartley, Thomas Engleheart Amyot, Cyril Guy Whorlow, Frederick Waistell Hird, James Rowland Rigg, Ernest Lloyd Shelton-Jones, Walter Joseph Ronan, and Edward John Stubbs.

Lieutenant Francis H. Storey relinquishes his temporary commission (dated Dec. 7th).

TERRITORIAL FORCE.

Army Medical Services.

Captain John B. Yeoman, Deputy Assistant Director of Medical Services, to be Major.

Royal Army Medical Corps.

1st South Midland Mounted Brigade Field Ambulance: Lieutenant Cyril R. Wallace, from the 2nd South Midland Field Ambulance, to be Lieutenant.

2nd East Anglian Field Ambulance: Major James M. G. Bremner to be Lieutenant-Colonel (temporary).

1st Home Counties Field Ambulance: Captain Antony A. Martin, from Attached to Units other than Medical Units, to be Captain.

1st East Lancashire Field Ambulance: Gordon Lisk Trelawney Stoker to be Transport Officer, with the honorary rank of Lieutenant.

2nd East Lancashire Field Ambulance: Captain Alexander Callam to be Lieutenant-Oolonel (temporary). Emor Reuben Cooper to be Lieutenant.

1st London (City of London) Field Ambulance: Major Edmond W. St. Vincent-Ryan to be Lieutenant-Colonel (temporary).

1st North Midland Field Ambulance: Arthur Heath to be Lieutenant.

2nd North Midland Field Ambulance: Samuel Russell Foster (late Cadet Serjeant, Belfast University Contingent, Senior Division, Officers Training Corps) to be Lieutenant.

1st West Riding Field Ambulance: Herbert John Robson (late Captain, Northern Command, Royal Army Medical Corps (Volunteer), Leeds Companies) to be Captain. Hugh Roger Partridge to be Lieutenant.

3rd Northern General Hospital: John Broadley to be Captain. Archibald Young (late Major of the Unit) to be Captain.

1st Southern General Hospital: The undersigned to be Lieutenants: Stephen Grange Askey, Alfred Percy Phillips, Percival Courtnay Cole, and Ambrose Wilfred Owen.

1st London (City of London) Sanitary Company: Private Charles John Dickenson Gair, from the 23rd (County of London) Battalion, The London Regiment), to be Lieutenant.

2nd London Sanitary Company: Francis Samuel Carson to be Lieutenant.

West Lancashire Clearing Hospital: William Percy Moffet to be Lieutenant.

2nd London Clearing Hospital: Eric Stuart Taylor to be Lieutenant.

1st South Western Mounted Brigade Field Ambulance: Leighton Hill Hay to be Lieutenant.

Sanitary Service: Lieutenant-Colonel Archibald K. Chambers is seconded.

Attached to Units other than Medical Units.—To be Captains: Julius Henry Beilby, late Surgeon-Captain, Worcestershire (Queen's Own Worcestershire Hussars) Imperial Yeomanry, Lieutenant Daniel R. Kilpatrick, Thomas Sanders Worboys (late Lieutenant, Royal Army Medical Corps, Territorial Force). Lieutenant John T. Shaw resigns his commission on account of ill-health. Lieutenant Edward C. B. Paul is seconded. To be Lieutenants: George Crawshaw and Frederic Ernest France.

Obituary.

HERBERT VICTOR WENHAM, M.B., B.S. LOND., F.R.C.S. ENG.

THE cause of medical education in China has received a great blow in the death of Dr. H. V. Wenham, of the Union Medical College, Peking, from septic pneumonia. He was a distinguished scholar of St. Bartholomew's Hospital, and in 1902 graduated M.B. Lond. as well as becoming M.R.C.S., while in the following year he took the B.S. Lond. and the F.R.C.S. Eng. After three years' further study (mostly in house appointments at St. Bartholomew's), equipping himself for the object he had in view, he went to China and at once began to search for the best outlet for his energies as medical teacher. He knew the crying need that exists for trained Chinese doctors able to introduce the benefits of scientific medicine and surgery among the millions of this great country suffering to such an incalculable and unnecessary extent from disease improperly treated. The Union Medical College was then starting on its career, and Dr. Wenham saw that its scheme of giving as thorough a medical education as possible was just what he was seeking, and he offered his services, which were at once accepted. From that time till his death he worked hard and incessantly among the students. Possessed of high ability he very soon became a fluent Chinese scholar, able to read and write Chinese, also to lecture and demonstrate in that language. When the epidemic of pneumonic plague appeared in North China he inspired his students with enthusiasm for the opportunity which it gave them of showing their true worth, the result being that a number of them volunteered as nurses and medical helpers, working well throughout the epidemic. Two of them became infected and died. Of these two one rushed back when he fell ill to Peking to Dr. Wenham, his master, who nursed him himself till death came. In the most fearless way he searched out and isolated at once any other cases, and it was due primarily to Dr. Wenham's exertions that a big epidemic of this highly infectious disease was prevented in Peking. Later on, during the Revolution he took the field at the head of his students as a Red Cross unit and rendered fine service to the sick and wounded during the fighting round Hankow. Modest and self-effacing to a degree, he was loved by his students, who were able to judge his character during the continuous hours he spent among them. He was one of the leading members of the College Faculty, and was constantly to the fore with new thoughts and methods for raising the standard of medical education. A thorough admirer of his old school, his constant aim was to bring the College and its new hospital up to "Bart's" standard. This meant hard work, but hard work and a brave example made up his world. During his nine years in China he not only worked entirely without pay, but contributed from time to time to the funds of the hospital when necessity arose. In order to enable himself to do this he lived in a modest way, denying himself wherever possible.

In Dr. Wenham the British medical profession and the Christian missionary world in the Far East have lost a most valuable representative. To quote a Chinese writer, who expressed the feelings of Chinese and foreigners alike towards him: "None who came in contact with him but felt the great charm of his unique personality, his purity of motive, his devotedness, sincerity, and abhorrence of sham or careless work, which were the outstanding features of his work." He was a warm-hearted friend of the anti-opium movement, and last year paid a visit to England, with General L. Chang, to plead the cause of the movement at home. He died in the beautiful hospital largely built by his exertions, and his funeral was attended by his devoted students and fellow workers, Sir John Jordan, the British Minister, and a large number of foreigners and Chinese.

Dr. Wenham left a widow, for whom much sympathy is felt.

Correspondence.

"Audi alteram partem."

THE SHORTAGE OF MEDICAL STUDENTS.

To the Editor of THE LANCET.

SIR,—The registrars, deans, and other officers of the schools of medicine and of approved scientific institutions throughout the United Kingdom have been good enough to furnish me with returns showing the number of medical students in attendance this session as compared with the number in attendance last year. As the statistics have an important bearing on many questions touching the future supply of qualified practitioners for the service of the country, I would ask you to publish the following figures:—Decrease in enrolments October, 1914, as compared with preceding year: First-year students, 56 fewer; second-year students, 237 fewer; third-year students, 237 fewer; fourth-year students, 211 fewer; fifth (and higher) year students, 300 fewer.

The aggregate number of medical students now pursuing their curriculum with a view to qualification is thus about 1000 smaller than in 1913.

Unless many senior students return to their studies within the next few months the result will be that the number of young qualified practitioners added yearly to the ranks of the profession will during the next few years be from 200 to 300 less than before. This is equivalent to a diminution of about 25 per cent. of the average number annually added to the Medical Register on qualification. The number annually removed from the Register by death or otherwise has for some years past been about 800.

In view of the additional losses among senior practitioners due, directly or indirectly, to the war, the prospective diminution of our reserve supply calls for serious consideration.

I am, Sir, yours faithfully,

DONALD MACALISTER,
President, General Medical Council.
Medical Council Office, Oxford-street, W., Dec. 19th, 1914.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

To the Editor of THE LANCET.

SIR,—At a recent meeting of the Council of the Brussels Medical Graduates' Association it was resolved to send out a circular to all British practitioners with Belgian medical degrees specially asking support for the above fund. It was hoped that they would be willing to assist this association in getting together a considerable sum that might be presented to the above-mentioned fund in the name of Belgian medical graduates generally.

The appeal has been fairly successful, but the council desires that at least 100 guineas should be collected before the contributions are handed over, and this amount has not as yet been quite gained. May I ask through your columns any Belgian medical graduate whom our circular may not have reached, or who has not already subscribed to the fund, for a small subscription for the above purpose?— I am, Sir, yours faithfully,

MAJOR GREENWOOD,
Treasurer, Brussels Medical Graduates' Association.
243, Hackney-road, N.E., Dec. 20th, 1914.

THE MEDICAL DIRECTORY.

To the Editor of THE LANCET.

SIR,—In reference to your remarks about the omission of the "abroad" section of the "Medical Directory" we desire to point out that the compilation of this list is one which has presented numerous problems to those who have had to undertake it. It has always contained only a selection of names, and it is not easy to know where to draw the line. We think the list has only been useful to a small proportion of the users of the Directory, but they are worthy of consideration, and the whole matter has again our serious attention.

We are, Sir, yours faithfully,

London, W., Dec. 19th, 1914. J. & A. CHURCHILL.

CHLORALOSE AS AN ANÆSTHETIC.

To the Editor of THE LANCET.

SIR,—Professor D. T. Barry's letter in THE LANCET of Dec. 12th draws attention to a much neglected hypnotic. Anhydroglycochloral, better known by the fancy name chloralose, was prepared in 1892 by M. Henriot by combining chloral hydrate and glucose. He sought to produce a hypnotic to replace chloral. The therapeutic and physiological properties of the drug were investigated by M. Ch. Richet, who found that in doses of 0·3 grm. per kilo of the animal sleep came on and lasted an hour and a half, and although it was profound all the reflexes were not only preserved but exaggerated The anæsthesia was complete, but the least external shock produced twitchings of a tetanic character. When the dose was raised to 0·50 grm. per kilo death resulted by arrest of the respiration. Many French physicians recommend its use in all cases in which chloral would otherwise be prescribed; and as an anæsthetic in strong doses, 0·50 grm., Dr. Héricourt and Dr. Ch. Féré consider it is indicated in all cases of weak cardiac action, and find that it is well borne by the stomach. Withal it should be administered with great caution to hysterical patients, to whom it should at first be given in small doses, say 3 grains, and the total amount in the day ought not to exceed 8 grains. In epileptics M. Féré has, however, given as much as 20 grains without causing any unpleasant results. The hypnotic, however suffers from the great disadvantages of having a bitter nauseous taste and being sparingly soluble in water. M. Bain prepares an effervescent form of the drug which lessens these disadvantages. The drug is, however, generally given in cachets. But as Dr. J. M. Fortescue-Brickdale ("Newer Remedies") has included the drug in his list of dangerous hypnotics, and states that, contrary to the view of French physicians, it is a cardiac depressant, it is highly improbable that it will come into general practice. A much less toxic chemical is trichloracetyl-dimethylphenyl-pyrazolone, also known as chloral-antipyrine, and by the fancy name hypnal, which is produced by the action of chloral-hydrate on antipyrine. Dr. Burdet recommends it as a hypnotic in insomnia, due to pain or the irritation of coughing, in 7 grain doses. It occurs in crystals, is soluble in water, and is devoid of taste and smell.

I may add that some years ago I prescribed chloralose, but unfortunately the drug was unknown to the compounders, and my patients unconsciously took chloral.—I am, Sir, yours faithfully,

Dec. 12th, 1914. GEORGE FOY.

INSOMNIA AND SUICIDE.

To the Editor of THE LANCET.

SIR,—Those oculists who pay special attention to the symptoms resulting from refractive errors will welcome the paper by Mr. C. E. Pronger under the title of "Insomnia and Suicide" in THE LANCET of Dec. 12th.

In my experience some of the results I have obtained from the proper correction of errors of refraction, in cases similar to those he mentions, have appeared so extraordinary that I have hesitated hitherto to accept them as being due entirely to the wearing of suitable glasses, but with the evidence given by the author of the paper it seems I am justified in considering these effects are correct. There is no need for me to narrate case histories, and I have the notes of two patients in particular who threatened to commit suicide on more than one occasion during their fits of depression, but with the constant wearing of glasses, which fully corrected their errors of refraction, all thoughts of suicide disappeared.

Possibly it would have been still more interesting if Mr. Pronger had given some idea as to the form the errors of refraction in his cases assumed, more particularly in those he mentions. On going hurriedly through my case books I find most of these (which may be almost called "borderland") cases have very low degrees of astigmatism, rarely exceeding 0·75 D., with the axes of the cylinders at different angles—for instance, the axis for one eye vertical, for the other horizontal, or axis for one down and out, for the other down and in, but at different degrees. Sometimes the amount of astigmatism is as low as 0·12 D., and I think these cases will be found often to have the more marked symptoms—in fact, I am inclined to say the lower the error the greater the nerve disturbance. As might be expected, hypermetropes are more often found to be the sufferers than myopes, though the latter are not rare; the patients are to be met with usually in the decade 35–45, and naturally amongst those following sedentary or studious occupations. In estimating the amount of the refractive error it is often necessary to use atropine, so active and vigorous is the ciliary muscle in these patients; on the other hand, it will be needful to re-examine some when the cycloplegic has passed off, as a certain number are presbyopic although the so-called presbyopic age may not have been reached. The glasses prescribed must be worn constantly.

I am, Sir, yours faithfully,

Harley-street, W., Dec. 15th, 1914. REGINALD EVERSHED.

VACANCIES IN THE TERRITORIAL MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—Might I urge the claims of the R.A.M.C. (T.F.) upon the younger members of the profession? Judging by the appeals of commanding officers of Reserve Units for officers, there appears to me to be a danger of the Territorial Medical Service being overlooked. As it is probable that a considerable portion of our Territorial Army may shortly be leaving our shores for foreign service, it is of the utmost importance there should be no shortage of medical officers to call upon when necessary. Might I suggest that a list appear in THE LANCET of units in which there are vacancies. My own unit, the 3rd (Reserve) Northumbrian Field Ambulance, is in urgent need of officers.

I am, Sir, yours faithfully,

O. L. APPLETON,
Major, R.A.M.C. (T.F.), O.C. 3rd (Reserve) Northumbrian Field Ambulance.

Wenlock Barracks, Hull, Dec. 17th, 1914.

*** For some time past notices of vacancies in the Territorial Medical Service have appeared week by week in our "War" column. We are always pleased to help officers in command of units to complete their establishment.—ED. L.

OPEN-AIR TREATMENT FOR WOUNDED SOLDIERS.

To the Editor of THE LANCET.

SIR,—The healing power of the winds of the Heavens is now established beyond all question; but is there not also virtue during winter's stormy nights in the peace and cheeriness of a hot dinner, an armchair, and a blazing fire? A return to the latter after visiting the "open-air hospital" at Cambridge (which has undergone no modification since its inauguration in the dog days) brings wonderings as to what proportion of our medical profession would really approve of the "open-air treatment" at one of the dampest spots in England of those 1250 brave defenders of our hearths and homes who have been sent back from the trenches, wounded and suffering, into the heart of old England at Christmas-time, only to land in a cricket field, now one vast muddy slosh, across which are stretched rows of draughty open verandahs that constitute the hospital! No heating arrangements whatever, no tables, no chairs. (The goodly proportion who are up and dressed take their meals—none too hot—on the edges of the beds.) No matter how bad the weather, there is no way of shutting it out. Nurses in goloshes and with hands all chilblains wrestling with the elements for the possession of surgical dressings. Men just as splendid as ever. When one from a convoy of a dozen frost-bite cases who arrived last week remarked, "What they say I'm suffering from is exposure," there was no vestige of complaint in his tone—merely a desire to communicate a fact we did not seem able to grasp on this side of the Channel. The cases do well and the total results seem as good as those from any other hospital, therefore in spite of the unique discomfort, active intervention is not called for from the point of view of the scientific healing of the wounds. But is that the only consideration? Why if the healing results are not very markedly superior should lads with terrible injuries be deprived of any harmless and obtainable comfort?

I am, Sir, yours faithfully,

ETTIE SAYER, M.B. Lond.

Upper Brook-street, London, W., Dec. 16th, 1914.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

DURING the week the interest in the movement for aiding the Belgian doctors and pharmacists, both those who remain in their own country and those who are refugees with us, has made steady progress. The list of subscriptions which we publish does not bring the record of contributions nearer than the morning of Tuesday last, Dec. 22nd, as the occurrence of the Christmas holidays compels us to go to press early in the week.

The first order for parcels of medical materials is under execution. The goods are awaiting despatch to Belgium by Messrs. Burroughs, Wellcome, and Co., through the agency of Mr. H. Hoover, 3, London Wall Buildings, E.C., Chairman of the Commission for Relief in Belgium. The British Government have not yet given the Commission the necessary licence to export. The parcels will be consigned, on the instruction of the Belgian Committee, represented here by Professor C. Jacobs, to M. Delacre, a well-known pharmacist in Brussels, who has been directed in making the distribution to report the results as soon as possible to the British Committee.

The British Committee have appointed a sub-committee to inquire into cases in this country where small immediate relief is sought, and where it seems right to supplement the regular action in this direction of the British Government.

Dr. F. Howard Humphris, President, Brussels Medical Graduates' Association (8, West Chapel-street, Mayfair, W.), writes:—

> "An appeal in money is being made for those Belgian doctors who are refugees in this country, and this has met already with generous response. There are many, however, who would doubtless prefer to find a home in the family of an English medical man where they could give such services as lie in their power. Up and down the country thousands of homes have already been given to destitute Belgians, and I feel that there must be many medical men in this country who would in this way like to repay something of the debt of gratitude which they owe to Belgium. There are about 140 Belgian doctors at present in England, the majority of whom are in very straightened circumstances, and I feel that it only needs an appeal through your columns to the 30,000 British practitioners to call forth a ready response in the form of an offer such as I indicate."

Dr. Humphris will deal with any correspondence relating to the matter, and put any offers before the Committee of Belgian Medical Men in London, who are endeavouring to assist their compatriots.

Dr. Major Greenwood, treasurer, Brussels Medical Graduates' Association (243, Hackney-road, N.E.), appeals in a letter in our columns to Belgian medical graduates for subscriptions to the Fund.

A meeting of the medical profession in Hampstead, called by the local Division of the British Medical Association, was held in the hall of the Blind School, Swiss Cottage, on Dec. 18th in furtherance of the objects of the Fund for the relief of doctors and chemists in Belgium. Sir Rickman Godlee explained the objects of the Fund, and Dr. D. G. Pidcock moved, and Dr. G. E. Shuttleworth seconded, the following resolution, which was carried:—

> That a fund be established entitled "The Belgian Medical Relief Fund," and that the trustees be the chairman and vice-chairman of the Hampstead Division of the British Medical Association.

The Pharmaceutical Society of Great Britain has been active in various directions in succouring Belgian pharmacists who are refugees, many of whom are in very distressing circumstances.

The following subscriptions to the Fund have been received by Dr. Des Vœux up to Tuesday morning last, in addition to subscriptions amounting to £1888 previously acknowledged:—

	£	s.	d.
Mr. E. Warters	2	2	0
Sir John W. Byers ...	2	2	0
Dr. Clifford Beale	5	5	0
Medical Insurance Agency	26	5	0
Dr. T. W. McDowall ...	5	5	0
Mr. F. Manser...	2	2	0
Mr. G. L. Latour	1	1	0
Dr. Justin McC. McCarthy	1	1	0
Dr. Henry Malet	2	2	0
Sir Edgecombe Venning	3	3	0
Mr. Ernest Osborne ...	1	1	0
Mr. Lionel Scargill ...	1	1	0
Clinical Society of Manchester (per Dr. Price Williams, Hon. Treas.)	25	0	0
Dr. S. M. Salaman... ...	1	0	0
Dr. Alfred C. Warren ...	1	1	0
Miss Helen MacMurchip	0	5	0
Dr. F. Charlesworth ...	2	2	0
Dr. Emma M. Johnstone	5	0	0
Sir Alfred Fripp	26	5	0
North Middlesex Division B.M.A. (first list)—			
Dr. A. M. Bremner	0	10	6
Dr. E. C. Curtis ...	0	10	6
Dr. F. Hasler	0	10	6
Dr. W. Knapp	1	1	0
Dr. W. Mailer	0	10	6
Dr. G. M. Mellor ...	1	1	0
Dr. W. E. Porter ...	0	10	6
Dr. H. F. Staunton	1	1	0
Dr. W. H. Tomlinson	0	10	6
Dr. W. F. Waugh ...	0	10	6
Dr. W. B. Winster...	0	10	6
Dr. F. C. Wood ...	1	1	0
Dr. A. G. Allan ...	0	10	6
Dr. F. Slater Jones	0	10	6
Dr. F. W. Wiles ...	0	10	6
Dr. Johnstone Campbell	3	3	0
Dr. Sidney Davies ...	2	2	0
Dr. G. H. West Jones ...	2	2	0
Dr. Leslie Thorne Thorne	1	1	0
Dr. Archibald Finlay ...	3	3	0
Dr. J. Blyth	0	10	0
Dr. Percy C. Bushnell...	2	2	0
Dr. D. Macmillan	3	3	0
Sir StClair Thomson ...	2	2	0
Dr. Herbert Lucas... ...	2	2	0
Dr. Thos. Redmayne ...	3	3	0
Dr. Constance Long ...	5	0	0
Dr. F. W. Emery	5	0	0
Dr. Chas. W. Chapman	1	1	0
Mr. W. F. Brook	3	3	0
Mr. Clayton-Greene ...	10	10	0
Dr. J. Wiglesworth ...	1	1	0
Mr. F. W. Gamble... ...	2	2	0
Dr. Abraham Cohen ...	1	1	0
Dr. C. H. Joy	1	1	0
Dr. F. Broadbent	2	2	0
Dr. H. Witham	1	0	0
Dr. R. S. C. Edleston ...	1	1	0
"Anon."	1	0	0
Dr. Charles Frier	5	5	0
Dr. W. R. Reith	2	2	0
Sir Arthur Downes ...	5	5	0
Mr. J. A. Symonds ...	0	10	0
National Union of Women's Suffrage Societies, Port Talbot Branch (collected by Dr. Henrietta James)	4	3	6
Mr. E. G. Thorne	0	10	0
Dr. Hugh Playfair... ...	3	3	0
Dr. W. B. Russell	1	1	0
Dr. G. Victor Miller ...	1	1	0
Dr. Arthur C. Black ...	3	3	0
Dr. W. Townsend Storrs	1	0	0
Mr. F. Ashley Rogers ...	2	2	0

Subscriptions to the Fund should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited, and sent to Dr. H. A. Des Vœux, 14, Buckingham Gate, London, S.W.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge with thanks the receipt of surgical instruments, &c., kindly contributed by the following donors since the publication of the last list:—

Lieutenant-Colonel C. J. McCartie, I.M.S., Kingston, Co. Dublin; Dr. Evers, Faversham; Anonymous; Messrs. Maw, Son, and Sons, Aldersgate-street, E.C.; Dr. Darley Wynne, Clonmel, Co. Tipperary; Dr. F. W. Monsell, Lydney, Glos.; Colonel Joubert de la Ferté, Weybridge; Dr. J. Ross Steen, Ilford; Dr. R. Murdock Matheson, Edinburgh; Dr. Aldersmith, Horsham; and Dr. E. A. Milner, Lancaster.

THE LATE PROFESSOR VAN GEHUCHTEN.

Professor van Gehuchten of Louvain, whose death occurred at Cambridge on Dec. 9th, was a neurologist of world-wide fame. His original work on the anatomy of the nervous system, on staining methods and chromatolysis, on the olfactory and acoustic nerve tracks, and on many other of the most difficult problems of neuro-pathology, proved him to be a great teacher as well as a great investigator and clinician.

BEIT MEMORIAL FELLOWSHIPS.—At a meeting last week of the trustees of the Beit Memorial Fellowships for Medical Research the following were elected Fellows: Edwin Greaves Fearnsides, M.D. Cantab., M.R.C.P. Lond., assistant physician to the Hospital for Paralysis and Epilepsy, Maida Vale, W.; Frances Mary Gore Micklethwait, F.I.C.; and Eward Palmer Poulton, M.B. Oxon., M.R.C.P. Lond., assistant physician to Guy's Hospital. The Fellowships are each of the annual value of £250, and the usual tenure is three years, but an extension of one year may be granted by the trustees in exceptional cases. The following are the researches proposed by the present successful candidates and the places at which they will be carried out: Dr. Fearnsides: (1) To continue the work with Dr. Henry Head, Dr. Paul Fildes, and Dr. J. McIntosh on syphilis of the nervous system; (2) to investigate the intimate anatomical relationships of the meninges and parenchyma of the nervous system in man and animals with a view to the further elucidation of the different behaviour of these structures in disease; (3) to continue investigations on the clinical manifestations of diseases of the pituitary body. Place of research: The London Hospital, E., and the Hospital for Epilepsy and Paralysis, Maida Vale, W. Miss Michlethwait: Chemiotherapeutics, especially with regard to organo-metallic compounds of the nature of "salvarsan," with a study of the metallic derivatives of aminocarboxylic acids and polypeptides. Place of research: Royal College of Science, London, for chemical experiments; Lister Institute, King's College, or Physiological Laboratories, University College, for physiological experiments. Dr. Poulton: Respiration and metabolism in disease. Place of research: Laboratories of Guy's Hospital Medical School.

THE WAR.

The Legion of Honour.

The President of the French Republic, with the approval of the King, has bestowed the Croix de Chevalier of the Legion of Honour upon Captain J. J. O'Keeffe, Royal Army Medical Corps, for gallantry during the operations between August 21st and 30th with the Expeditionary Force.

The Casualty List.

Up to the time of going to press the casualty lists have contained the name of one officer of the Royal Army Medical Corps:—

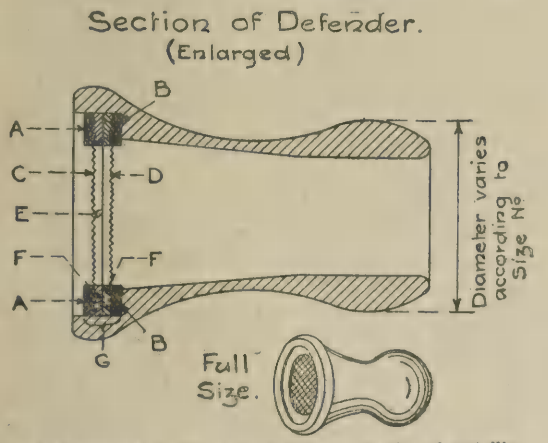
Wounded: Lieutenant R. F. Young.

French Statistics of Wounds in the War.

The Medical Service at the Ministry of War has now made public some interesting statistics from the beginning of the war to Dec. 1st in regard to the results of wounds received during the war in the French Army as follows: Cured and returned to the front, 54·5 per cent.; cured but given convalescent leave, 24·5 per cent.; the remainder include those still under treatment in hospital and a small number of invalided. The death-rate was only 3·48 per cent. Thus more than half the wounded, thanks to the care of the medical service, have been returned to the firing line, while the death roll among the wounded has fallen below the mark of any previous war.

The Mallock-Armstrong Ear Defender.

During the present war so much has been heard of temporary and permanent deafness and distraction occasioned by gun- and shell-fire that it is not surprising that the Mallock-Armstrong ear defender, a device used for several years with complete success under peace conditions to obviate these injuries, is now brought forward to alleviate the very real trouble that affects our active naval and military forces. This ear defender is the invention of Mr. A. Mallock, F.R.S.; it allows ordinary sounds to pass with but very slight loss of distinctness or power, but absolutely prevents any change of pressure from reaching the inner ear. The essential part of this ear defender consists of a very light and sensitive diaphragm of thin material held in the outer part of a short tubular fitting of special construction, which is placed just within the ear; the diaphragm is protected from physical injury, dampness, &c., by a non-corrodible metallic gauze stretched on both sides close to and parallel to it. The diaphragm, thus protected, can only move within the narrowly prescribed limits controlled by the proximity of the gauze, but it vibrates freely to ordinary sounds and transmits these to the ear with little loss. Explosions or other loud sounds momentarily press the diaphragm against the inner gauze—or "stop"—which prevents the rapid change of pressure created by the explosion reaching the tympanum. When in use the senses are therefore left free to receive natural impressions; ordinary conversations, commands or whistles are distinctly heard immediately after firing; and all gun-fire, whether that of machine guns, light field guns, or guns of the largest calibre, is harmless to the ears. In the same way shell-bursts, however close, are rendered equally harmless.



E, The sensitive diaphragm. C, Outer protection of metallic gauze. D, Inner protecting gauze, or "stop." F and F, Spacing-washers between diaphragm and the two gauzes. A A and B B, Inner and outer frame. G, Seven components forming protective drum.

We have asked Mr. Mallock to add a note of his personal experience with the "defender," and this he has done.

"I made this 'ear defender' for my own convenience in 1895 or thereabouts, when I first had much to do with large guns, and found that it was very efficient for the purpose in view. I have worn them for many hours consecutively. After the first few minutes their presence in the ear is forgotten, and I have never known them to cause any discomfort. It is curious when standing in positions where the explosive pressure is high to feel the compression of the body produced by the blast—an effect which is quite lost in the sharp shock received through the ears when the latter are unprotected; at least, this is my own experience. Different individuals differ considerably in their sensitiveness to such shocks, but, as a rule, all who have much to do with firing large guns or even small arms have their power of hearing more or less impaired."

University College, Dundee, and the War.—It is stated that 36 per cent. of the total number of men students normally in attendance at University College, Dundee, are on active service, or are in training with the Regular or Territorial Forces, and the majority of those who remain, though too young for enlistment, are members of the Officers Training Corps. The attendance of students at the College has fallen from 202 in the session before the war to 153 in the present session. There are 67 women in place of 68 the previous year, and 86 men in place of 134.

Antitetanic Serum in France.—Our Paris correspondent writes: "Dr. Bazy on Dec. 14th presented to the Académie des Sciences an interesting communication on the effects of preventive injections of antitetanic serum. Out of a total of 10.896 wounded 129 cases of tetanus occurred. Of these 90, or 70 per cent., died, thus showing the gravity of the disease. Tetanus set in in some cases only two days after the injury, in others as late as 28 days, but the usual term was from six to seven days. It was particularly frequent in certain localities. The preventive action of the serum is beyond dispute. M. Bazy cited a case of 200 wounded, of whom only half received the injection. Out of the hundred injected only one had tetanus, which appeared next morning under circumstances in which the preventive serum had no time to take effect. Out of the 100 who had no injection 18 had tetanus. The character of the wound also exercises a great influence on tetanic infection. The disease appears more particularly as a result of suppurating or 'ragged' wounds produced by fragments of shell and by shrapnel, and is very rare as the result of bullet wounds. However, M. Bazy has seen nine cases of tetanus out of

120 bullet wounds. The injection should be made as soon as possible in a dose of 1 c.c."

Queen's University of Belfast.—It has been decided to hold a special final M.B. degree examination on Jan. 5th to 8th, 1915, in response to a petition signed by candidates who wish to qualify for the war.

Chinese Medicine and the War.—Our Peking correspondent writes: "The reflective effect of the war on China is proving almost disastrous in many ways. Trade is at a low ebb, silver currency has fallen very much, prices have gone up, and in all hospitals the drugs and dressings have increased so much in value as to make them almost prohibitive. Germany had of late years made such great strides in the supply of drugs to China, and given such facilities for prompt delivery of these things, as well as supplying hospitals and medical men with price lists in English and plentiful samples, that many doctors now feel the want of such houses as those of Merck, Bayer, and others. British drug manufacturers have now a great opportunity in the Far East, especially since the fall of Tsingtao, and the expulsion of every German from Hong-Kong, the import capital of Chinese trade. The Chinese of late have shown much appreciation of salvarsan, and every day one has to turn away applicants for it as the stock has now come to an end. Japanese medicine, as is well known, is founded on German lines; every educated Japanese doctor can speak German, they use German instruments, drugs, &c., and read the literature of that country, while they have hitherto for years past sent many graduates to study in German laboratories. Now they all hate the Germans, and it would therefore seem that the present is a great opportunity for British medical schools to come to the front and do what they can to attract both Japanese and Chinese students."

Medical News.

University of Oxford.—The following candidates have satisfied the examiners in the undermentioned examinations:—

First B.M., B.Ch.

Organic Chemistry.—E. A. Crook, W. Gover, R. B. Hervey-Wyatt, C. F. Krige, and R. T. F. D. Roberts.

Human Anatomy and Human Physiology.—J. H. Beattie, E. H. Creed, R. B. Hervey-Wyatt, G. H. Rossdale, J. J. Savage, N. F. Smith, S. C. Varley, and J. P. S. Walker.

Second B.M., B.Ch.

Materia Medica and Pharmacology.—E. W. Bowell, W. H. Butcher, G. J. Evans, G. T. Gimlette, J. M. Guilfoyle, G. A. Maling, and A. L. Watts.

Pathology.—E. W. Bowell, W. Brown, J. B. Cavenagh, R. W. J. A. Cushing, A. G. East, V. T. Ellwood, L. Gameson, F. C. Gladstone, J. M. Guilfoyle, and B. E. Wall.

Forensic Medicine and Public Health—E. W. Bowell, L. R. Broster, W. Brown, R. W. J. A. Cushing, R. C. Fairbairn, B. E. Wall, and H. A. B. Whitelocke.

Medicine, Surgery, and Midwifery.—L. R. Broster, W. Browne, F. W. Browne, C. H. Carlton, V. T. Ellwood, F. C. Gladstone, C. H. L. Harper, G. A. Maling, H. G. Morris, G. S. Robinson, and B. E. Wall.

University of Cambridge.—At a Congregation held on Dec. 19th the following medical degrees were conferred:—

M.D.—H. G. P. Castellain, Trinity.
M.B.—F. G. Rose, St. John's.
M.B., B.C.—S. G. Platts, Caius.

Victoria University of Manchester.—At examinations held recently the following candidates were successful in the subjects indicated:—

Final M.B. and Ch.B.

W. S. Booth, Clara A. Lomas (First Class Honours; distinction in Obstetrics, Surgery, and Medicine), J. G. McKinlay, Kamil Maximus, H. A. Sandiford (awarded distinction in Surgery), Henry Wilson, and S. A. Winstanley.

Medicine.—S. G. J. Dowling.

Forensic Medicine and Toxicology.—Robert Chevassut, J. S. Chorlton, S. G. J. Dowling, Joseph Fielding, G. B. Horrocks, J. D. Kenyon (awarded distinction), and H. H. Stones.

Third M.B. and Ch.B. Examination.

General Pathology and Morbid Anatomy.—J. H. Albinson, Hitchon Chadwick, William Christopher, Richard Colley, E. W. Fish, Eva L. Glasier, Alice M. A. Holt, R. L. Newell, F. C. Ormerod, Nesta H. Perry, Dorothy Potts, C. R. Sandiford, Walter Stansfield, and G. B. Wild.

Pharmacology and Therapeutics.—J. D. Byrd, E. W. Fish, E. R. Gilmore, J. B. Leigh, B. L. Lloyd, Brian Walley, and G. B. Wild.

Hygiene.—J. H. Albinson, E. W. Fish, E. R. Gilmore, J. B. Leigh, B. L. Lloyd, Brian Walley, and G. B. Wild.

Second M.B. and Ch.B. Examination.

F. H. Anderson (awarded distinction in Anatomy), G. E. Archer, Mercy D. Barber, W. T. G. Boul, Hilda K. Brade, C. F. J. Carruthers, Kathleen L. Cass, Ruth E. Conway, J. C. T. Fiddes, Jacob Holker, Norman Kletz, E. N. P. Martland, A. B. Platt, Elizabeth C. Powell, Jacob Shlosberg, D. M. Sutherland, Harry Taylor, and Henry Tomlinson.

Physiology.—A. M. Cotes and R. S. Paterson.

University of Leeds.—At a Congregation held at the School of Medicine on Dec. 19th the following medical degrees were conferred:—

M.B., Ch.B—W. D. Anderton, S. N. Cohen, T. Elliott, H. Foxton, C. M. Gozney, A. S. Hebblethwaite (second-class honours), E. Hesterlow, F. King, J. J. Digges La Touche, H. W. Robinson, J. Wilkinson (with second-class honours), and J. Wright.

The following pass-lists are posted:—

Final Examination for M.B., Ch.B.

Part I., Pathology and Bacteriology.—Z. P. Fernandez, Miriam Hutchinson, and C. R. Knowles.

Part II., Forensic Medicine and Public Health.—H. Foxton, F. King, J. J. Digges La Touche, and C. H. Seville.

Second Examination for M.B., Ch.B.

Part I., Anatomy and Physiology.—S. Adler, G. R. Baxter, H. E. Charles, H. V. Horsfall, G. F. Hurst, J. H. Parker, N. Pick, C. Riley-Watson, W. H. Rowden, P. Shillito, and C. H. Smith.

Part II., Pharmacy.—G. R. Baxter, A. P. Bertwistle, Marion Draper, H. Goodman, J. Gordon, K. Jaidka, and F. H. Smith.

First Examination for the Degree of Bachelor of Dental Surgery

Part III., Dental Mechanics and Dental Metallurgy.—L. Waring.

Final Examination for the L.D.S.

Part I.—A. L. Fraser.
Part II.—N. T. Williamson.

Royal College of Surgeons of Edinburgh.—At a meeting of the College held recently the following gentlemen, having passed the requisite examinations between Oct. 5th and 8th, were admitted Fellows (F.R.C.S. Edin.):—

George Joseph Adams, M.B., Ch.B. Edin., Edinburgh; Howard Greene Barrie, M.R.C.S. Eng., L.R.C.P. Lond., Kuling, China; Francis James Browne, M.B., Ch.B. Aberd., Abertillery, Mon.; Herbert Ernest Clutterbuck, M.D., C.M. Toronto, Toronto, Canada; Premananda Das, L.M.S. Calcutta, L.R.C.S. Edin., Calcutta, India; John Flynne, L.R.C.S.E. (Triple), Ipswich, Queensland; Arthur Jonas Friedlander, M.R.C.S. Eng., L.R.C.P. Lond., Essex; Henry Edwardes Griffiths, M.R.C.S. Eng. L.R.C.P. Lond., Grahamstown, South Africa; John Kirk, M.B., Ch.B. Edin., Canton, South China; Leonard Hugh McBride, M.D. New Zealand, London; Percy Peter James Stewart, M.B., Ch.B. New Zealand, Dunedin, Otago, New Zealand; William George Thompson, M.D. Edin., Sunderland; and Thomas Jefferson Williams, M.D. Iowa, L.R.C.S. Edin., Chicago, Illinois, U.S.A.

University of Durham: Faculty of Medicine.—At the Convocation held on Dec. 15th the following degrees were conferred:—

Bachelor of Medicine (M.B.).—Arthur Causton Freeth, St. Mary's Hospital; Grace Winifred Pailthorpe, London School of Medicine for Women; Ernest Charles Gilchrist Parker, College of Medicine, Newcastle-upon-Tyne; Home Playfair-Robertson, St. Bartholomew's Hospital; and Sarah Louisa Rook, College of Medicine, Newcastle-upon-Tyne.

Bachelor of Surgery (B.S.).—John Bain Alderson, M.B., College of Medicine, Newcastle-upon-Tyne; Grace Winifred Pailthorpe, London School of Medicine for Women; and Sarah Louisa Rook, College of Medicine, Newcastle-upon-Tyne.

We regret to announce the death, on Dec. 22nd, of Sir Robert Simon, who recently resigned from the post of physician to the Birmingham General Hospital, after 35 years' service upon the honorary medical staff of that institution.

Oxford Ophthalmological Congress.—This Congress will assemble at Keble College, Oxford, on the evening of Wednesday, July 14th, 1915, and the meeting will be held on the two following days. A discussion will take place upon Industrial Diseases and Accidents, to be opened by Dr. Frank Shufflebotham. The subject of Coal-miner's Nystagmus will be discussed by Dr. T. Harrison Butler, Mr. T. S. Maitland, Mr. J. Jameson Evans, and Dr. A. C. Norman. Industrial Cataract will be dealt with by Dr. William Robinson; Plumbism as it Affects the Eye, by Mr. S. McMurray; Steel Furnace Accidents, by Mr. S. H. Pooley; and Some of the Rarer Industrial Diseases of the Eye, by Mr. Sydney Stephenson, Master of the Congress. Dr. J. Gray Clegg and Dr. E. L. Collis will also contribute papers. The first day of the meeting will be devoted to demonstrations, and members are asked to assist with cases, specimens, operations, or novelties. The honorary secretary is Mr. Bernard Cridland, of Wolverhampton.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALEXANDER, W. H. M., M.B., C.M. Glasg., has been appointed Medical Officer of Health to the Crowle Urban District Council.

BUSHNELL, FRANK GEORGE, M.D., B.S. Lond., L.R C.P. Lond., M.R.C.S., D.P.H. Camb., has been appointed Tuberculosis Officer to the Plymouth Borough Council.

HALL, OCTAVIUS, L.R.C.P. & S. Edin., L.F.P.S. Glasg., D.P.H. Irel., has been appointed Medical Officer of Health of Plymouth.

MACPHERSON, R. W., M.D. Aberd., has been appointed Assistant School Medical Officer for the County of Cheshire.

MAGEE, J. R., L.R.C.P. & S. Irel., has been appointed Medical Officer to the Londonderry Port Sanitary Authority.

MARSDEN, J. ASPINALL, M.R.C.S., L.S.A., has been appointed Medical Officer of Health to the Hipperholm Urban District Council.

MARTIN, DOUGLAS, M.B., Ch.B. Edin., D.T.M., has been appointed Assistant School Medical Officer and Assistant Medical Officer of Health for the County Borough of South Shields.

MURRAY, SYDNEY E., L.M.S.S.A., has been appointed School Medical Officer to the Sutherland Town Council.

WILLIAMS, FREDERICK MANN, M.R.C.S., L.R.C.P. Edin., D.P.H. Camb., has been appointed Consulting Medical Officer of Health of Plymouth.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

BARNSLEY, BECKETT HOSPITAL AND DISPENSARY.—Second House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and laundry.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BIRMINGHAM CITY MENTAL HOSPITAL, Rubery-hill.—Female Junior Assistant Medical Officer. Salary £200 per annum, with apartments, board, laundry, &c.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street.—Senior and Junior House Surgeons. Salaries £110 and £100 per annum respectively, with residence and board, &c.

BIRMINGHAM UNION.—DUDLEY-ROAD INFIRMARY: Second Assistant Medical Officer. Salary at rate of £210 per annum. Third Assistant Medical Officer. Salary at rate of £170 per annum. Fourth Assistant Medical Officer. Salary at rate of £160 per annum. SELLY OAK INFIRMARY: Assistant Medical Officer. Salary at rate of £180 per annum. All with apartments, rations, laundry, and attendance.

BIRMINGHAM, YARDLEY-ROAD SANATORIUM AND ANTI-TUBERCULOSIS CENTRE.—Third Assistant Medical Officer. Salary £200 per annum, with board and residence.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRADFORD, ST. LUKE'S HOSPITAL AND UNION HOUSE.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with rations, apartments, and washing.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried. Salary at rate of £125 per annum, with board, lodging, and washing.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House Surgeon. Salary at rate of £100 per annum, with board, lodging, and washing.

BURLEY-IN-WHARFEDALE, SCALEBOR PARK ASYLUM.—Assistant Medical Officer. Salary £250 per annum, with rooms, board, attendance, and washing. Or Locum Tenens for winter months. Salary £5 5s. per week.

CANCER HOSPITAL, Fulham-road, S.W.—Surgical Registrar. Salary £100 per annum.

CANTERBURY, KENT COUNTY ASYLUM, Chartham.—Third Junior Assistant Medical Officer. Salary £250 per annum, with quarters, board, washing, &c.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—Two House Surgeons for six months. Salary at rate of £140 per annum each, with board, residence, and laundry.

CARLISLE, CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, lodging, and washing.

CHESTER, CITY AND COUNTY OF THE CITY OF.—Assistant Medical Officer of Health. Salary £300 per annum.

CHICHESTER, WEST SUSSEX COUNTY MENTAL HOSPITAL.—Second Assistant Medical Officer Salary £250 per annum, with apartments, board, laundry, and attendance.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing. Also Physician to Out-patients.

CITY OF LONDON UNION INSTITUTION AND INFIRMARY, 42, Clifton-road, Lower Clapton, N.E.—Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, rations, and washing.

CITY OF WESTMINSTER UNION INFIRMARY, Fulham-road, S.W.—Second Assistant Medical Officer and Third Assistant Medical Officer. Salaries £160 and £140 per annum respectively, with board, residence, and washing.

CROYDON GENERAL HOSPITAL.—Senior House Surgeon. Salary £105 per annum, with residence, board, and laundry.

DOUGLAS, ISLE OF MAN, NOBLE'S HOSPITAL.—Resident House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

EDINBURGH UNIVERSITY.—Lectureship on Chemical Physiology. Salary £300 per annum.

EDMONTON EDUCATION COMMITTEE, URBAN DISTRICT COUNCIL, Middlesex.—Temporary Assistant School Medical Officer and Certifying Officer. Salary at rate of £300 per annum.

EDMONTON UNION INFIRMARY, 77, Bridport-road, Upper Edmonton.—Second Assistant Medical Officer, unmarried. Salary £160 per annum, with residential allowance.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £200 per annum, with board, lodging, and washing.

HULL CITY ASYLUM.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

JHARIA MINING SETTLEMENT, Bihar, India.—Chief Sanitary Officer. Salary Rs. 1200 (£80), rising to Rs. 1500 (£100) a month, with house.

LEEDS GENERAL INFIRMARY.—Ophthalmic House Surgeon for six months. Salary £50 per annum, with board, residence, and laundry.

LEICESTER ROYAL INFIRMARY.—Ophthalmic House Surgeon and Assistant House Physician (joint post). Also Two Assistant House Surgeons. Salaries at rate of £100 per annum, with board, apartments, washing, and bonus. Also Two Assistant Resident Medical Officers for six months, with board and apartments.

LERWICK PARISH COUNCIL AND SHETLAND COMBINATION POORHOUSE COMMITTEE.—Medical Officer. Salary £78 per annum.

LIVERPOOL, BROWNLOW-HILL INSTITUTION.—Resident Assistant Medical Officers. Salary £250 per annum, with apartments and usual resident allowances.

LOWESTOFT AND NORTH SUFFOLK HOSPITAL.—House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and laundry.

MAIDSTONE, KENT COUNTY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £250 per annum, with board, quarters, attendance, washing, &c.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Locum Tenens, unmarried. Salary £5 5s. per week.

MANCHESTER EDUCATION COMMITTEE.—Female Assistant School Medical Officer, unmarried. Salary £300 per annum.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Senior House Surgeon for six months. Salary £100 per annum, with board, residence, and laundry.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and washing.

NEWCASTLE-UPON-TYNE CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary £250 per annum, with board, lodging, &c.

NEWCASTLE-UPON-TYNE EDUCATION COMMITTEE.—Assistant School Medical Officers (One Male and One Female). Salaries £300 per annum.

NEWCASTLE-UPON-TYNE AND NORTHUMBERLAND SANATORIUM FOR CONSUMPTIVES, Barrasford, North Tyne.—Resident Medical Officer. Salary £350 per annum, with board, residence, and laundry.

NEWPORT (MON.), ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry. Also Honorary Medical Officer to Ear, Nose, and Throat Department.

NORTHAMPTONSHIRE COUNTY COUNCIL.—Assistant School Medical Officer. Salary £25 per month.

NORTH RIDING OF YORKSHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary at rate of £300 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

NOTTINGHAM, RANSOM SANATORIUM, Sherwood Forest, Mansfield.—Resident Medical Officer. Salary £200 per annum, with board, residence, and laundry.

PRESCOT UNION INSTITUTION AND INFIRMARY, Whiston.—Assistant Medical Officer. Salary £240 per annum.

PRESTON ROYAL INFIRMARY.—Assistant Resident Medical and Surgical Officer. Salary £120 per annum, with board, residence, and laundry.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Resident House Surgeon. Salary £100 per annum, with board, washing, &c.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Resident Medical Officer. Salary at rate of £150 per annum, with board and washing.

ST. GEORGE'S HOSPITAL, Hyde Park Corner, S.W.—Surgical Registrar. Salary £200 per annum.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Resident Medical Officer. Salary at rate of £90 per annum, with board, residence, and laundry.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing

SHEFFIELD ROYAL INFIRMARY.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

STOKE-ON-TRENT COUNTY BOROUGH TUBERCULOSIS SANATORIUM.—Resident Assistant Medical Officer for Stanfield Sanatorium and Assistant at the Tuberculosis Dispensary. Salary at rate of £250 per annum.

STOKE-UPON-TRENT UNION INSTITUTION AND HOSPITAL, London-road, Newcastle, Staffs.—Assistant Resident Medical Officer, unmarried. Salary £200 per annum, with rations, apartments, and washing.

SUNDERLAND COUNTY BOROUGH.—Temporary Tuberculosis Medical Officer. Salary at rate of £500 per annum.

SUNDERLAND ROYAL INFIRMARY.—Senior Resident Medical Officer and Two Junior House Surgeons. Salaries £150 and £120 per annum respectively, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £125 per annum, with board, washing, and attendance.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £150 per annum, with rooms, board, and washing.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, &c.

UNIVERSITY OF LONDON.—Examiners.

WAKEFIELD, CLAYTON HOSPITAL.—Senior House Surgeon. Salary £160 per annum, with board, lodging, and laundry.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £250 per annum, with apartments, board, washing, and attendance.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary at rate of £200 per annum, with board, apartments, and laundry.

WEST BROMWICH AND DISTRICT HOSPITAL.—House Surgeon and Assistant House Surgeon. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

WOLVERHAMPTON UNION WORKHOUSE.—Assistant Resident Medical Officer and Medical Officer of Cottage Homes, unmarried. Salary £250 per annum, with apartments, rations, &c.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTHS.

CORBETT THOMPSON.—On Dec. 15th, at Gordon-road, Ealing, the wife of Major F. S. Corbett Thompson, I.M.S., of a daughter.

MACKINNON.—On Nov. 2nd, at Nairobi, British East Africa, the wife of Murdoch MacKinnon, M.D., D.P.H., of a daughter.

DEATHS.

BROWN.—On Dec. 15th, Dr. James Brown, Harvieston, Tring, aged 58 years.

LECKIE.—On August 28th, at Frameries, near Mons, Belgium, Captain Malcolm Leckie, D.S.O., R.A.M.C.

BOOKS, ETC., RECEIVED.

BRITISH HOMŒOPATHIC ASSOCIATION, Russell-square, W.C.
- The Case for Homœopathy. By C. E. Wheeler, M.D., B.S., B.Sc. Price 1*s*.

CONSTABLE AND CO., LIMITED, London.
- The Curves of Life: An Account of Spiral Formations and their Application to Growth in Nature, to Science and to Art, with Special Reference to the MSS. of Leonardo da Vinci. By Theodore Andrea Cook, M.A., F.S.A. Price 12*s*. 6*d*. net.
- Electric Cooking, Heating, Cleaning, &c.: Being a Manual of Electricity in the Service of the Home. By "Housewife" (Maud Lancaster). Edited by E. W. Lancaster, A.M.Inst.C.E., M.Inst.E.E. Price 3*s*. 6*d*. net.

CROSBY LOCKWOOD AND SON, London.
- Water Supplies: their Purification, Filtration, and Sterilisation. A Handbook for the Use of Local and Municipal Authorities. By Samuel Rideal, D.Sc. Lond., and Eric K. Rideal, B.A. Cantab., Ph.D. Bonn. Price 7*s*. 6*d*.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.
- The Heart in Early Life. By G. A. Sutherland, M.D., F.R.C.P., Senior Physician to the Hampstead and North-West London Hospital. Price 6*s*. net.
- Cunningham's Manual of Practical Anatomy. Revised and edited by Arthur Robinson, Professor of Anatomy in the University of Edinburgh. Sixth edition. Vol. II., Thorax, Head, and Neck. Price 10*s*. 6*d*. net.

GRIFFIN, CHARLES, AND CO., London.
- Forensic Medicine and Toxicology. By J. Dixon Mann, M.D., F.R.C.P., and W. A. Brend, M.A., M.B., B.Sc. Fifth edition. Price 18*s*. net.

KELLY, CHARLES H., City-road, London, E.C.
- Human Derelicts: A Collection of Medico-Sociological Studies for Teachers of Religion and Social Workers. Edited by Dr. T. N. Kelynack. Foreword by Sir Thomas Clouston, M.D. Price 5*s*. net.

LAURIE, T. WERNER, London.
- A Guide to Gothic Architecture. By T. Francis Bumpus. Price 10*s*. 6*d*. net.

LIPPINCOTT, J. B., COMPANY, Philadelphia and London.
- Practical Bandaging, including Adhesive Plaster-of-Paris Dressings. By E. L. Eliason, A.B., M.D., Assistant Instructor in Surgery, Pennsylvania Medical School. Price 6*s*. net.

MACMILLAN COMPANY, New York.
- The Cancer Problem. By William Seaman Bainbridge, A.M., Sc.D., M.D., Professor of Surgery, New York Polyclinic Medical School and Hospital. Price 17*s*. net.

MACMILLAN AND CO., London.
- A Text-book of Pathology for Students of Medicine. By J. George Adami, M.A., M.D., F.R.S., and John McCrae, M.D., M.R.C.P. Lond. Second edition. Price 25*s*. net.

Notes, Short Comments, and Answers to Correspondents.

THE SYSTEMATIC PHYSICAL EXAMINATION OF INDUSTRIAL WORKERS.

THE importance of systematic physical examination of workers is well emphasised in a paper read before the Session on Industrial Hygiene at the Third Annual Congress of the National Council for Industrial Safety, Chicago, last October, by Surgeon J. W. Schereschewsky, of the United States Public Health Service.[1] Valuable as such a procedure is for safeguarding the health of the individual worker in industrial concerns, Dr. Schereschewsky emphasises its great importance to the progress of the science of industrial hygiene. The general introduction of systems of medical supervision, he says, with periodic physical examinations in various industries will result in the collection of a body of data similar to those already obtained in New York by the careful physical examination of several thousand garment workers, which when studied will form a logical basis for practical recommendations to make all such industries safe from a health standpoint. Each industry thus treated will be enabled to see to its own sanitation, with the result that the enormous economic loss caused in industries by preventible diseases and disabilities will disappear.

OFFICIAL MANNERS.

To the Editor of THE LANCET.

SIR,—The note in your issue of Dec. 12th under the above title interested me much. I was recently a candidate for a post under the H —— County Council—applications to be sent in by Oct. 6th—but up to date I have not received even a printed postcard acknowledging my candidature! In fact, had my chief not told me that he had received a "confidential" letter from the medical officer of health concerned, inquiring as to my credentials, I should have been in doubt as to whether my application had not gone astray in the post. I enclose my card. I am, Sir, yours faithfully,

I.M.S.

HEALTH AND HOSPITALS IN TRINIDAD.

THE report on the Blue Book of Trinidad and Tobago for the year 1913–14 has just been presented to Parliament. It states that the health of the colony during the year was good, but that an unfortunate outbreak of yellow fever occurred at the Brighton oilfields, where there were 10 cases and 3 deaths. The prompt action of the sanitary authorities kept the outbreak in check and it did not spread to any other district. The estimated population on March 31st, 1914, was 352,145—an increase of 6748. The number of births during 1913–14 was 11,825, and the number of deaths 8121. A further increase of 3046 was due to immigration. The Colonial Hospital, Port of Spain, with 320 beds, is the most important in the colony. The number of patients admitted at this institution during the year was 5579, and the daily average in hospital 269. At the San Fernando Hospital, which has 120 beds, 2991 persons were admitted, the daily average in hospital being 110. District hospitals are also maintained by the Government at Tobago, Arima, St. Joseph, Tacarigua, Couva, Princes Town, and Cedros, with an aggregate accommodation of 246 beds. There are two hospitals devoted entirely to the treatment of persons suffering from yaws—one in Trinidad and the other in Tobago. The former has accommodation for 200 patients and the latter for 160. The use of salvarsan is still continued with favourable results in the treatment of this disease, but the number of patients has again increased, there being at the present time 72 cases under treatment in Trinidad and 57 in Tobago.

Dr. N. Mayne.—It would have been better to make sure that the case contained instruments and that the practitioner intended to operate without consulting the surgeon to the infirmary. The operation in question is very usually performed in collaboration.

Nemo.—The medical referee's behaviour was not correct and cannot be defended.

W. W. S (Genoa).—Our correspondent is too ferocious.

F. W.—Warwick and Tunstall's "First Aid to the Sick and Wounded" (Bristol: John Wright and Sons, Limited. Price 1*s*.; leather, 2*s*. 6*d*.) contains an admirable and fairly detailed (60 pages) and well illustrated epitome of anatomy and physiology, which should be amply sufficient for the nurse's requirements and meet the necessities of a nurse's examination. A "Text-book of Anatomy and Physiology for Nurses," also, by Amy E. Pope (New York: G. P. Putnam's Sons. 1913. Price 6s.) was reviewed in THE LANCET, Jan. 10th, 1914, p. 111.

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[1] Public Health Reports, Vol. XXIX., No. 47, Nov. 20th, 1914 Washington, D.C.: Government Printing Office.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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THE Index and Title-page for the current half year are published in this issue, which completes the second volume of the year 1914.

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THE LANCET Office, Dec. 22nd, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 16	29·66	W.	—	60	47	40	41	42	Overcast
" 17	30·12	W.	0·13	65	50	38	41	43	Overcast
" 18	29·59	S.W.	0·26	53	52	43	48	49	Raining
" 29	29·57	W.	0·30	55	46	40	40	41	Cloudy
" 20	29·48	S.W.	0·14	56	47	35	36	38	Cloudy
" 21	29·37	W.	0·05	62	44	37	39	39	Raining
" 22	29·72	W.	...	42	41	36	38	38	Overcast

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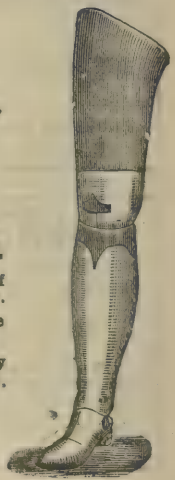

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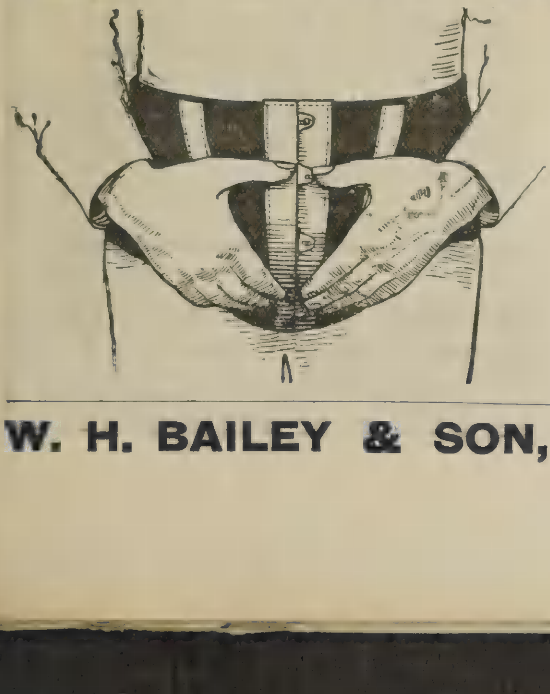

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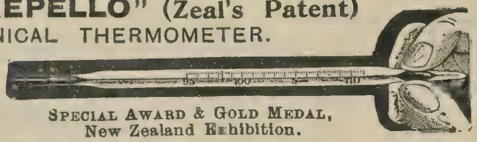

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PREPARED under the MOST MINUTE ANTISEPTIC PRECAUTIONS

Supplied in Tubes, sufficient to vaccinate 1 or 2 persons at **5d.** each; per dozen, by 12 tubes or more, **4s. 6d.**; 10 persons at **8d.** each; 25 persons at **1s. 3d.** each. Collapsible tubes for 40 vaccinations, **2s. 6d.** each. Packing and postage 1d. in addition.

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Medical Men and Nurses offering their services for Red Cross Work should provide themselves with a **BURBERRY**—the best means of obtaining efficient and healthful protection against the dangers and discomforts of prolonged exposure to rain or chilling wind, whilst travelling or on duty.

Notwithstanding the unprecedented demand, **BURBERRYS PRICES REMAIN AS USUAL,** as do all orders for Service Kit of every kind.

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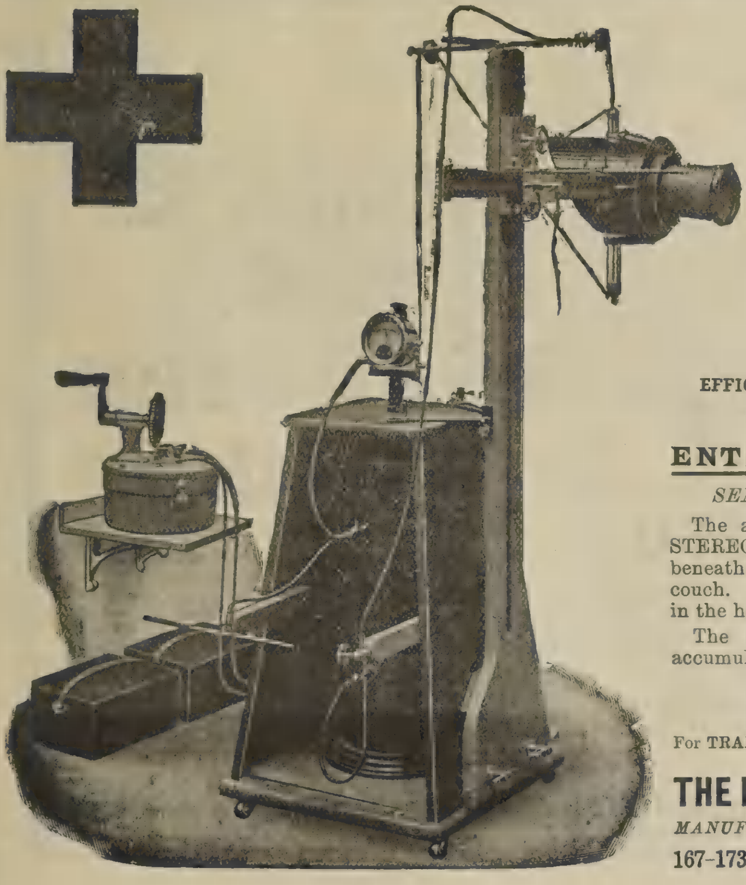

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As supplied to the British, French, and Russian Red Cross Societies.

STEREOSCOPIC MOVEMENTS
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EFFICIENT, COMPACT, SIMPLE, LOW COST.

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The apparatus is arranged for Radiography and STEREOSCOPIC RADIOGRAPHY, from above or beneath the patient when reclining on a table or couch. It can also be used for Fluorescent Screening in the horizontal direction as shown in illustration.

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JUNORA is supplied in two strengths :—		Per bottle.
A. About ¾-gr. Lecithin-Ovo products to the oz.	...	2/11
B. About 5-grs. Lecithin-Ovo products to the oz.	...	4/-

SPECIAL TERMS TO MEDICAL MEN

A full-sized trial bottle of Junora will be sent free to any Doctor on Application.

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By Appointment to H.M. The King.

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WINE OF HEALTH

Proprietors: Messrs. HUMPHREY TAYLOR & CO., Ltd.
(Established 1770)
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By Appointment to H.M. The King.

THE Lecithin-Ovo made by Messrs. Humphrey Taylor & Co. is the finest Lecithin obtainable. It is made exclusively in England, and is of uniform purity and efficiency. Every process of its manufacture has been examined and tested by the leading authorities on Lecithin in Great Britain, and their considered opinion is that Lecithin-Ovo thus obtained is superior in quality to any foreign preparation of Lecithin.

Lecithin-Ovo

40/- per lb. **3/6** per oz.

Lecithin-Ovo Capsules	1½ grs., **4/6** per 100. 3 grs., **8/6** per 100.
Lecithin-Ovo Powders	Finest quality from 10 to 30 per cent. strength at lowest prices.

Samples and quotations sent free on application to the Proprietors, who invite comparison of their quality and prices.

In DIABETES, GOUT, RHEUMATISM, &c.,

"G.B." Diabetes Whisky

(Late Proprietors: GEO. BACK & Co., LTD.)

PURE MALT. SUGAR FREE.

"THE LANCET," *October 5th, 1889.*

"G.B." DIABETES WHISKY.—This Whisky is almost absolutely free from extractive matter. It yielded in our analysis only 0·0275 per cent. of solid extract and 0·005 of ash. The alcohol amounted to 44·65 per cent. in weight, equal to 91·60 of proof spirit. It has scarcely any colour, and certainly deserves its name.—(Page 701.)

5/- per bottle, 55/- per dozen, carriage paid.
GUARANTEED TEN YEARS OLD.

Samples and analyses will be sent on application to the Proprietors.

HUMPHREY TAYLOR & CO., Ltd. (Est. 1770) Bloomsbury Distillery, London, W.C.

GASTRO-INTESTINAL SYMPTOMS

BOVININE
IN
INFLUENZA

The present wave of Influenza is marked by severe Gastro-intestinal symptoms requiring careful dietetic treatment. In " Bovinine " will be found a highly nutritious preparation, easy of digestion and assimilation, invaluable in allaying irritation, in supporting the system, and in promoting convalescence. It should be given freely until strength is fully restored.

In the graver complications of Influenza, such as **Bronchitis, Pneumonia**, and **Pleurisy**, its stimulating properties are most emphasised. "Bovinine" is readily retained when all other food is rejected.

In all conditions complete reliance may be placed in " Bovinine."

On Sale at all Chemists at 1s., 2s. 9d., and 4s. 6d. per bottle. Literature, Sample, and one of our new Glass Tongue Depressors free on application to

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For more than 20 YEARS

Antiphlogistine

has held its high place for therapeutic efficiency, because c.p. materials have always been used in its manufacture—regardless of price fluctuations.

Antiphlogistine, in the Field or Hospital, is a convenient, cleanly, safe **Antagonist** of the **Inflammatory process.** It saves valuable time. It **may** save invaluable lives—if used in the **early** stages of inflammatory conditions.

" There's only ONE Antiphlogistine "

Therefore, Physicians should WRITE "Antiphlogistine" to AVOID "substitutes."

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K. & O. DOUCHE FOR THE APPLICATION OF
GLYCO-THYMOLINE TO THE NASAL CAVITIES

GLYCO-THYMOLINE

IS USED FOR CATARRHAL CONDITIONS OF
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THIS FIELD AMBULANCE was equipped with the BIOLOGICAL PRODUCTS of H. K. MULFORD COMPANY and **BISMUTH-FORMIC-IODIDE COMP. POWDER MULFORD**

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An effective antiseptic, astringent, dry dressing for all wounds, cuts, sores, etc.

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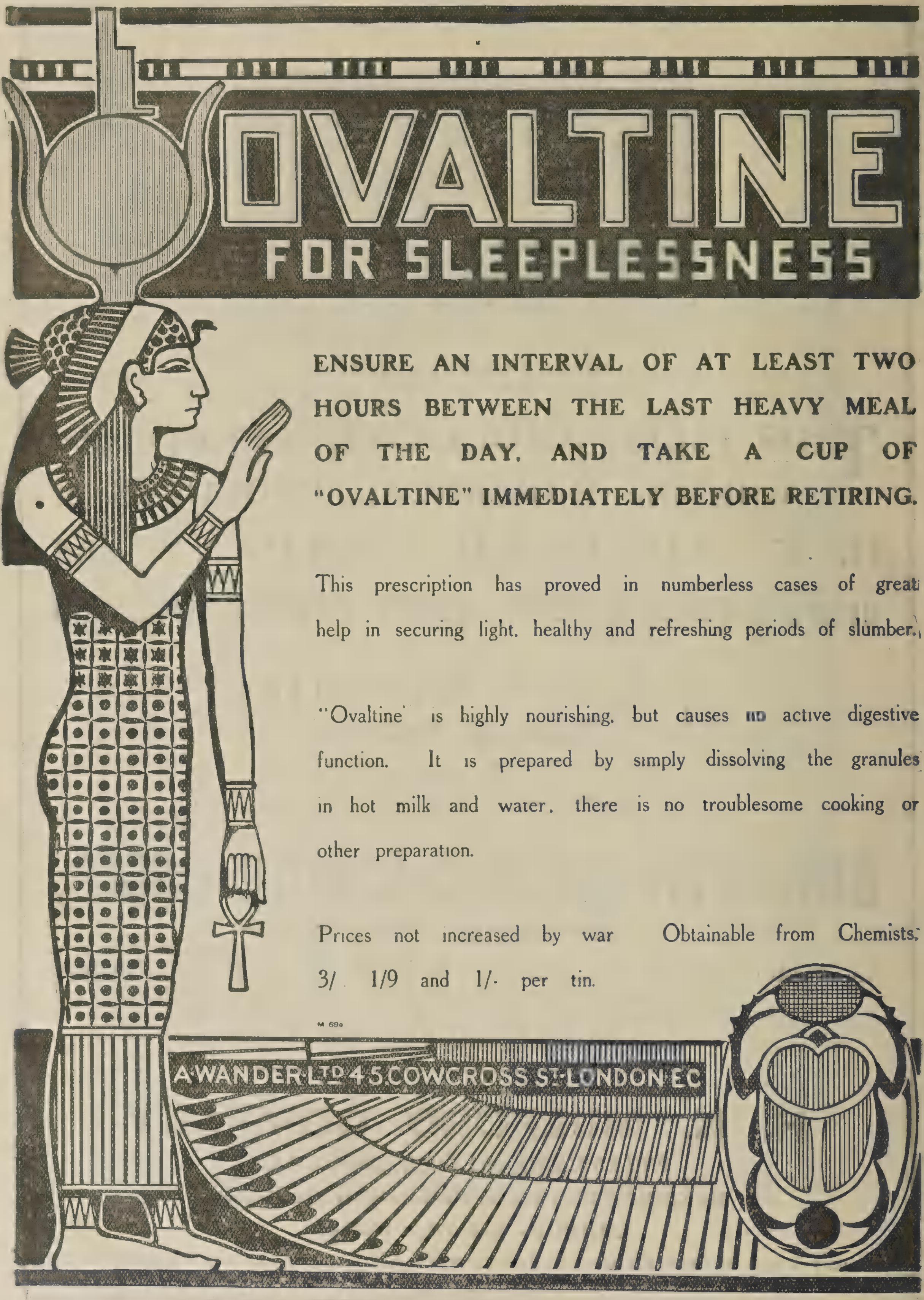

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ENSURE AN INTERVAL OF AT LEAST TWO HOURS BETWEEN THE LAST HEAVY MEAL OF THE DAY, AND TAKE A CUP OF "OVALTINE" IMMEDIATELY BEFORE RETIRING.

This prescription has proved in numberless cases of great help in securing light, healthy and refreshing periods of slumber.

"Ovaltine" is highly nourishing, but causes no active digestive function. It is prepared by simply dissolving the granules in hot milk and water, there is no troublesome cooking or other preparation.

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Lysol

of all manufactures

completely Superseded by an ALL-BRITISH Antiseptic certified of Higher Disinfecting Value

TOXOL

Manufactured by Boots Pure Drug Co., Ltd.

Responding to the desire of the Medical Profession to discard preparations paying tribute to the enemies of this country, the laboratory staff of Boots, *the* Chemists (consisting of some 30 highly-trained analysts), perfected TOXOL, which is identical in all but name with "Lysol" as formerly imported from Herren Schulke & Mayr of Hamburg—a solution of cresols in a saponaceous medium—and superior in strength of disinfecting power.

TOXOL is pronounced by medical men who are using it to have all the qualities of "Lysol," and is certified on high authority to excel *all* samples of "Lysol" in disinfecting co-efficient.

Copy of Report by Dr. SAMUEL RIDEAL, joint-originator of the RIDEAL-WALKER Co-efficiency Test. November 16, 1914.

"I have purchased at one of your branches samples of TOXOL, and my results on examination confirm your labelled strength that it is two and a half times as powerful as Phenol, and it is higher than all samples of 'Lysol' I have examined." *(Signed)* SAMUEL RIDEAL.

The following are extracts from the letters of Medical Men who have already used TOXOL to replace "Lysol":—

"It seems to be in every way quite satisfactory and an excellent substitute for 'Lysol.'"

"Very glad to test and prove that English science is as good as that of the Barbarians. It would be a good thing to circularise the profession with a list of alien enemies' products."

"I tried it on a septic finger and found it all you stated it to be."

"TOXOL is very satisfactory. The medical profession ought to feel grateful to Sir Jesse Boot for replacing a German article in such a prompt and satisfactory manner."

"Am using sample and I am so pleased with it that I shall continue to use TOXOL in future."

"An excellent preparation. I obtained 'Lysol' many times from Hamburg before any English chemist would stock it, so am interested in your venture."

"Dr. —— is pleased to see an English manufacturer superseding a German product, and he will give his support to such a company as will do this."

"Many thanks; have used solutions of TOXOL in various strengths for numerous minor surgical cases with most satisfactory results."

"Will give TOXOL a trial. Am much interested in finding that your firm has succeeded in making a preparation in England of a German make like 'Lysol.' It is much more efficient than the German."

"Superior to 'Lysol' as far as I have tried it."

Samples of TOXOL will be delivered free on application to Medical Men who have not yet tested it.

TOXOL is sold in 6½d., 11d., 1s. 7d., *and* 2s. 9d. *bottles at all branches or Sent carriage paid to any Medical Man at above prices; address Boots, M. O. Nottingham.*

Special Bulk Terms to Hospitals and Institutions.

Boots

CONTAINS ALL THAT IS DIGESTIBLE IN BEEF,
AND ALL THAT IS DIGESTIBLE IN WHEAT.

LARGELY PRESCRIBED BY MEDICAL MEN
THROUGHOUT THE BRITISH EMPIRE.

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PARKE, DAVIS & Co.'s PAGE.

LETTERS TO MEDICAL MEN

THE TREATMENT OF PNEUMONIA BY PHYLACOGEN.

NOTE.—The medical reports quoted in this letter are published by permission. On request we shall be glad to place any *bonâ-fide* enquirer in communication with the authors.

Mortality from Pneumonia.

DEAR SIR,—The mortality from pneumonia is always highest in the winter months. For example, we find that the mortality in London Hospitals during the past twelve months was as follows:—October to December, 1913, 1326; January to March, 1914, 1618; April to June, 1345; July to September, 871; giving a total for the year of 5160. Owing to the year having been exceptionally mild the mortality from Pneumonia is down by about 10 per cent. as compared with the previous year, but even so it indicates, if we are to assume that the rest of the country suffers in the same proportion as London, that the annual mortality in the British Isles must reach the enormous total of at least 55,000, or more than one thousand per week. Any treatment designed to reduce this huge mortality cannot fail to invite investigation by the medical profession.

Accurate Diagnosis Essential.

The figures mentioned above do not include the thousands of cases which lie on the border line. Apparently, it should not be difficult to make a definite diagnosis of pneumonia, and to determine the presence of complications, but clinical experience prompts the suggestion that this is not accomplished as often as is presumed; that many cases are diagnosed as "plain" pneumonia, whereas they are complicated with conditions in which the use of Pneumonia Phylacogen would be fruitless. For example, in not a few cases diagnosed as "pneumonia," autopsies have disclosed tubercular meningitis, acute miliary tuberculosis, &c., while complications with uræmia, acute nephritis, puerperal sepsis, cerebral meningitis, scarlet fever, &c., are also found.

Clinical Results.

The clinical study of Pneumonia Phylacogen has been diligently carried on by our Department of Experimental Medicine during the past three years, and some hundreds of cases have been reported. The records show a number in which there was no hope or apparent possibility of recovery by the ordinary treatment, but which ultimately did recover under the use of Phylacogen. At our London office alone we have received, during the past few months, definite reports of 26 cases, 22 of which recovered, and 4 died. Of the recoveries, in several cases a fatal prognosis had been made, while in others the period of illness was reduced by at least one-half.

Sudden Fall of Temperature.

One feature in the Phylacogen treatment of pneumonia is the occasional sudden reduction of the temperature, which sometimes falls even to the sub-normal. This should cause no more alarm than a similar drop in temperature during the crisis in pneumonia occurring under other treatment. The chart on the next column gives an illustration of what is frequently found in such cases.

The following report comes from Wales, and we transcribe it exactly as received. Man, aged 28, small patch of lobar pneumonia in left axilla, most intense toxæmia, temperature 105° for three days, wild delirium for eight days. Patient was seen by a consultant, who pronounced the case hopeless. On commencing Phylacogen treatment the temperature showed a gradual but persistent fall, and in six days became normal. The doses were 1 c.c., 2 c.c., 3 c.c., 3 c.c., 4 c.c., 4 c.c. Hypodermic injections of Strychnine, 1/60 grain, and Digitalin, 1/100, were given every four hours. The patient at one time showed signs of twitching under the strychnine, but use was persisted in although in smaller doses. The patient made an excellent recovery.

Broncho-pneumonia.

The accompanying chart refers to a case of Broncho-pneumonia. F. G., age 4, admitted direct from the school-room to the hospital on December 10th, temperature 103·8°, short hurried breathing, loose offensive stools, occasional cough, complained of earache. December 11th, ½ c.c. Pneumonia Phylacogen given at 10 A.M.; 2 P.M., temperature 102°; 6 P.M., temperature 101·6°. December 12th, temperature 99·6°, good night, slept well, pulse good, no pain or tenderness at site of injection, no cough, has taken nourishment well; evening temperature 99°, very good day. December 13th, very good night, temperature 98·6°; 6 P.M., temperature 99°, good day, cough loose. December 14th, temperature 98·4°, very good night; evening temperature, 99·4°, fairly good day. December 15th, temperature 98°, good night; evening temperature 98·4°, very good day. December 16th, 17th, and 18th, morning temperature 98°; evening temperature on the 17th 98°. The patient got up on the 18th, and no further record was taken. We have a number of other reports very similar to the above, in which the temperature came down after one dose, and of other cases in which two doses were required. The Medical Superintendent of the Hospital, who furnishes these reports, informs us that in these cases past experience has been that the high temperatures ran from five to seven days before the crisis was reached.

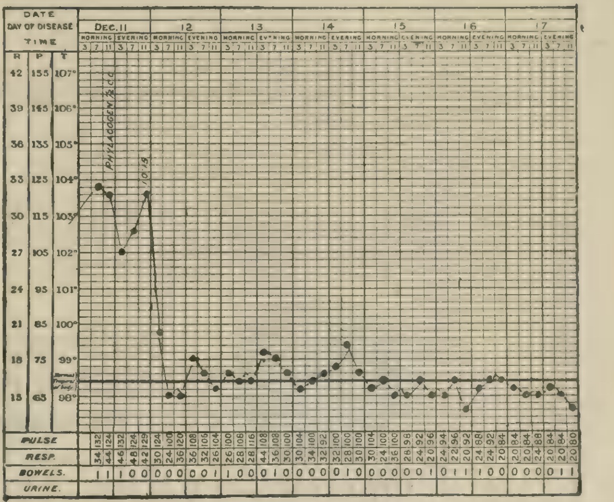

CHART OF A CASE OF BRONCHO-PNEUMONIA.

We have issued a booklet of 52 pages giving full particulars of Pneumonia Phylacogen; these contain extended case histories of 36 cases which recovered, and of 10 cases which had been treated with Phylacogen but in which death occurred. A copy of this booklet will be sent to any medical man on request.

Yours respectfully,

PARKE, DAVIS & Co.

Beak Street, Regent Street, London, W.

Vitafer

The Premier TONIC FOOD.

VITAFER is no hastily concocted preparation to meet the war demand for goods of British origin. Some of these are practically only dried skim milk powder with glycerophosphate, and are only of about half the real nerve nutritive value of such a preparation, as VITAFER, and, what is of serious moment to Diabetic patients, contain the whole of the milk sugar from which VITAFER is carefully freed.

To illustrate this point, we submit side by side the analysis of VITAFER and of one of the newest of these numerous claimants.

	VITAFER	THE TYPICAL EXAMPLE
Nitrogen	10.30	4.98
Chemically pure proteins	68.40	31.40
Sugar	absent	42.31

Comment is surely needless !

VITAFER contains certain substances essential to nutrition, known as Vitamines. In the case of Foods in which Ether is used for extraction, they are deprived of these valuable properties.

GOLD MEDAL awarded to VITAFER at the International Congress of Medicine, London.

VITAFER is sold at prices which bring it within the reach of all classes. — 2 oz. Tins, 1/3 4 oz. 2/- 8 oz. 3/6 16 oz. 6/-

Samples and full particulars post free to the Medical Profession, address—

Sole Proprietors and Manufacturers:
SOUTHALL BROS. & BARCLAY, Ltd., BIRMINGHAM.

Vitafer Chocolate

In Tablets containing 10 per cent. of Vitafer.

A delicious confection and a genuine stimulant.

Specially intended for travellers, sportsmen, and busy men and women who require a pick-me-up between irregular meals.

It is also ideal for Soldiers at the front, on the march, in training, etc.

In 6d. and 1/- packets of 12 and 24 tablets.

Rheumatism—Gout—Lithiasis—
Sciatica—Eczema—and Obesity
Of special value in ARTERIO-SCLEROSIS.

Urodonal

37 TIMES MORE POWERFUL THAN LITHIA.

Dissolves Uric Acid, Oxalic Acid, and Xantho=Uric Bodies,

Oxidises Cholesterin, Glucose, & Fats,

Eliminates Urea and Chlorides,
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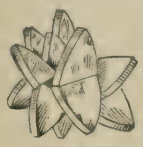
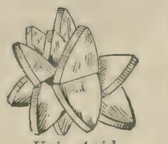
Restores Arterial Tension to Normal



Uric Acid Crystals.

3 teaspoonfuls per day, each teaspoonful in a glass of water, taken between meals, 10 days per month.

Acute conditions: 3 dessertspoonfuls per day. No Contra-indication, and may be continued indefinitely without any inconvenience.



Uric Acid Crystals.

GOLD MEDAL, LONDON, 1908
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COMMUNICATIONS:
Academy of Medicine, Paris, 10th Nov., 1908.
Academy of Sciences, Paris, 14th Dec., 1908.

URIC ACID is never found free in the organism. It always exists in a state of combination with Soda, Ammonia, &c.; it forms biurates or quadriurates, which are complex and not easily soluble.

URODONAL by reason of its special composition, is able to effect the double chemical decompositions which liberate the Uric Acid from the combinations where it is fixed, and cause it to be easily eliminated in the urine.

URODONAL is a most powerful solvent of **URIC ACID,** because it can destroy its organic combinations.

URODONAL, JUBOL, GLOBEOL, FILUDINE,
Prepared by J. L. CHATELAIN, 2 & 2 bis, rue de Valenciennes, Paris.
Can be obtained from all Chemists and Stores, or from the London and Colonial Agents,
HEPPELL & CO., Foreign Chemists, 164, Piccadilly, W.
Samples sent free to the Medical Profession on application to Heppell & Co.

The "Allenburys" Cod-Liver Oil and its Preparations.

(Trade Mark)

"*It is as nearly tasteless as Cod-Liver Oil can be.*"—LANCET.

The "Allenburys" Cod-Liver Oil is obtained from the finest selected livers of fresh cod, and prepared at Allen & Hanburys' own factories at Lofoten and Söndmör, in Norway. It is the result of manufacturing experience of nearly half a century, and represents the highest technical skill. The process of manufacture ensures the elimination of all unpleasant and harmful products. The "Allenburys" Cod-Liver Oil is therefore perfectly pure, and by its merit alone has obtained a unique position in the estimation of the profession. It is retained and assimilated when other Cod-Liver Oils derange the digestive system, and its full nutritive power is thereby assured.

"Bynol"

(Trade Mark)

"*A perfect combination of Malt Extract and Cod-Liver Oil.*"—B.M.J.

"Bynol," the "Allenburys" Malt and Oil, presents the pure "Allenburys" Cod-Liver Oil in intimate association with the finest Malt Extract. It contains a very high percentage of Cod-Liver Oil and is a valuable nutrient and digestive. Palatable and acceptable to the most fastidious, it is readily assimilated even when the digestive organs are impaired.

"Bynin" Emulsion

(Trade Mark)

"*This preparation is doubtless a valuable one, and one which we are glad to bring before the notice of the profession.*"—LANCET.

"Bynin" Emulsion is a unique combination of the "Allenburys" Cod-Liver Oil with "Bynin" pure active liquid malt, together with the hypophosphites of lime and soda. Palatable and easily digested, it is a valuable restorative of high nutritive power. It invigorates the nervous system and nourishes the enfeebled tissues.

DESCRIPTIVE LITERATURE AND SAMPLES FREE TO MEDICAL MEN.

Allen & Hanburys Ltd.

37, Lombard Street, LONDON, E.C.

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For Invalids, Dyspeptics and the Aged.

'Allenburys'
The DIET

Invaluable in Sickness and Convalescence.

TITLE IMPORTANT

The "Allenburys" DIET is a complete food chiefly intended for Adults, and is *quite distinct* from the "Allenburys" Foods for Infants. It is quickly prepared, exceptionally palatable, easily digested and wholly nourishing.

COMPOSITION & PREPARATION

The "Allenburys" DIET is made from pure, rich, full-cream milk and whole wheat, both ingredients being partially pancreatised during the process of manufacture. It needs boiling water only to prepare it for use.

ANALYSIS

Fat	15·4
Proteid	15·2
Soluble Carbohydrate ...	47·2
Starch	15·7
Mineral Matter	4·3
Moisture	2·2

Caloric Value of the "Allenburys" DIET when prepared ready for use:

Fat	23·8
Proteid	10·4
Carbohydrate	42·9

INDICATIONS FOR USE

In all Gastric conditions where it is found that curd is not digested, Gastritis, Gastro-Enteritis, Gastric Catarrh, Gastric Ulcer, Gastric Influenza, Obstinate Vomiting. In all Acute Disorders. Before and after Surgical Operations. In Convalescence, Gouty Dyspepsia, Insomnia, (taken last thing at night it promotes refreshing sleep and digestive rest). Neurasthenia. All forms of Tuberculosis. In Senile Disorders of the Digestion. When pure milk is not obtainable, viz., on Board Ship, in Tropical Countries or Distant Lands, or whenever a light nourishment is required. For the Invalid, Dyspeptic, and the Aged it is an essential nutrient.

ADVANTAGES

Most invalids' foods require cow's milk to be used in their preparation; this involves much time and careful mixing to avoid the presence of burnt milk or lumpiness—common characteristics of foods so prepared. The "Allenburys" DIET does not require cow's milk to be added. By the simple addition of boiling water a complete food is produced that is smooth to the palate and pleasant to the taste. The "Allenburys" DIET can be taken for prolonged periods without any distaste arising. These distinct advantages are of immense service in the work of a busy hospital or understaffed sick-room.

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Prices: In sealed tins
1/6, 3/- and 6/- each.

'Allenburys'
The DIET

☞ A large sample sent free on request.

BRITISH PHARMACOPŒIA, 1914

BURROUGHS WELLCOME & CO.'S products will be as hitherto

"B.P. or Better"

¶ THE BRITISH PHARMACOPŒIA, 1914, will become official on December 31, 1914. As the new Pharmacopœia will conform more closely to the advanced standards (notably in the case of melting points) adopted in the past by Burroughs Wellcome & Co., the changes, other than those of nomenclature and strength, are few so far as B. W. & Co. products are concerned.

¶ In the light of further researches, improvements will be introduced, so that all products prepared and issued by Burroughs Wellcome & Co. will, as heretofore, be B.P. or Better.

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H.G. 77

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Its use is attended by no inconvenience or pain.

By means of careful selection and proper maturing of the bark, the griping principles of Cascara Sagrada are eliminated, and "MALTINE" WITH CASCARA SAGRADA has an easy, painless action.

The therapeutic action of "MALTINE" WITH CASCARA SAGRADA has been demonstrated by clinical experience, the aid afforded by "MALTINE" to the nutritive and digestive processes serving to counteract any tendency of the drug to weaken and exhaust the system.

Each fluid ounce of "MALTINE" WITH CASCARA SAGRADA contains the Liquid Extract obtained from 60 grains of the bark, the equivalent of 66 minims B.P. Liquid Extract, or about 8 grains of the dry extract.

DOSE: From a teaspoonful to a tablespoonful.

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In ordering, kindly specify "**MALTINE COMPANY.**"

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Contains the essential nutriment—Protein and Carbohydrates—derived from our principal foodstuffs—Beef, Wheat, and Milk. Its protein content is present in the form of peptones and albumoses obtained by physiological processes, and its entire nutritive content is immediately assimilable and available for nutrition. "LIQUID PEPTONOIDS" is Aseptic, slightly Stimulating, and eminently **Palatable**, and is readily tolerated by the sensitive and fastidious patient. The fact of its easy assimilability is the basis of its successful use in the dietetic treatment of the numerous types of cases in which it is indicated.

Regarding "LIQUID PEPTONOIDS"

The Lancet writes: "A very valuable food. . . . a very powerful and agreeable tonic and stimulant."

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TEXTURÆ ANTIQUÆ, 88—EGYPTIAN

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is to produce certain physiological effects, in particular, contraction of the uterus. Research has shown that these effects are caused by definite active principles.

From
Empiricism
to Scientific
Precision

Why not use those active principles alone, omitting the unnecessary constituents of the drug?

BURROUGHS WELLCOME & CO. isolate the essentials of Ergot and issue them in a high state of purity, and of standard strength, under the title—

'ERNUTIN'

(TRADE MARK)

('Ernutin' presents Ergotoxine, 'Tyramine' and 'Ergamine')

In post-partum hæmorrhage the superiority of 'ERNUTIN' over ergot is specially marked.

After normal confinements, 'ERNUTIN' prevents or arrests hæmorrhage, promptly induces firm contraction of the uterus, improves the tone of the uterine muscle and assists involution.

'ERNUTIN' never varies in activity.

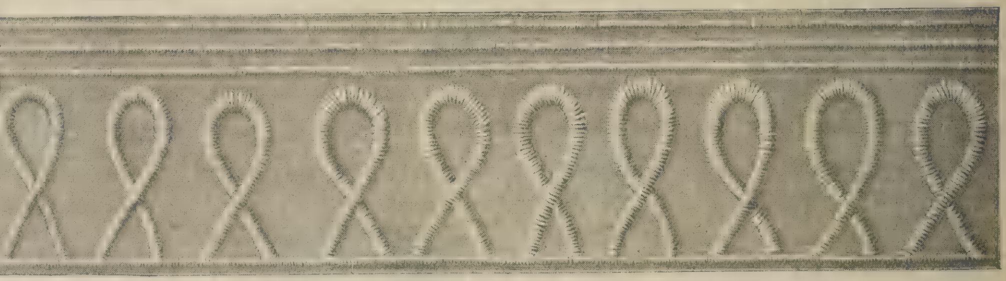
'ERNUTIN' Brand PRODUCTS

'ERNUTIN' (Oral), in bottles of 1 fl. oz., 4 fl. oz., 16 fl. oz. and 30 c.c.

'VAPOROLE' 'ERNUTIN,' sterile, in hermetically-sealed containers of min. 10 and 0·6 c.c., in boxes of 6; also 0·6 c.c. in boxes of 2

All Chemists

BURROUGHS WELLCOME & CO., LONDON



Bronze figure of Sekhet, an Egyptian fire-goddess. Sekhet is always represented with the head of a lioness. In this statue, the goddess appears to be clothed in a long embroidered robe with short sleeves. The design surrounding the edge of the skirt has been reproduced as a foot-piece. Date, circa 879-850 B.C.

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TEXTURÆ ANTIQUÆ, 89—EGYPTIAN

TRADE MARK 'TABLOID' BRAND Hexamine

Presenting Hexamine, B.P. 1914 (Hexamethylenetetramine) manufactured by Burroughs Wellcome & Co., at the 'Wellcome' Chemical Works, Dartford, Kent.

A valuable antiseptic for internal administration. The extent of its utility may be gathered from the fact that formaldehyde has been detected in the saliva, sputum, sweat, urine, blood and cerebro-spinal fluid, after the administration of Hexamine.

Its reliability as a diuretic and uric acid solvent is well known.

PREPARATIONS.—'Tabloid' Hexamine, gr. 3 and gr. 5.

Supplied to the Medical Profession in bottles of 25 and 100, gr. 3, at 6d. and 1s. 6d. per bottle, respectively; gr. 5, at 8d. and 2s. per bottle, respectively

See also Therapeutic Notes, page 197 Wellcome's Medical Diary, 1914

'TABLOID' BRAND SODIUM ACID PHOSPHATE, Gr. 10

Useful for acidifying alkaline urine

Supplied to the Medical Profession, in bottles of 25, at 6d. per bottle, by all Chemists

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London Exhibition Room: 54, WIGMORE STREET, W.
All communications intended for the Head Office should be addressed to Snow Hill Buildings, London, E.C.

Inner coffin of a Priestess of Amen-Ra, who is represented presenting offerings to the principal gods of the under-world. The Priestess is depicted in brightly-coloured robes, a portion of the intricate design of which is reproduced in detail. Date, circa 800 B.C.

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Prescribed by the Medical Profession for 35 years.

The BRITISH MEDICAL JOURNAL says:
"Time and use have justified the claims put forward for these preparations."

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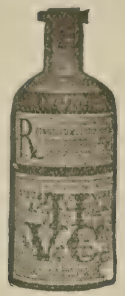

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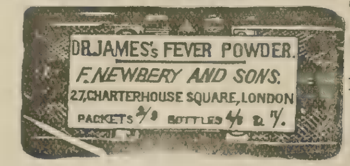
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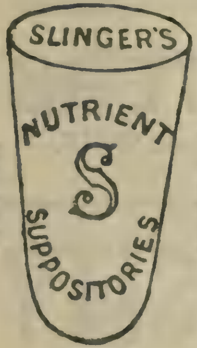

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MENTAL PRIVATE PATIENTS of both sexes are received in connexion with the Worcestershire Asylum.

Extensive private grounds in the beautiful Lickey district.

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Provision for PRIVATE PATIENTS has just been provided in two detached Villas.

Inclusive charges from £1 11s. 6d. per week.

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Private Home for Mentally afflicted LADIES; ten only received.
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MIDDLETON ST. GEORGE, near DARLINGTON,
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PRIVATE HOUSE FOR THE CARE AND TREATMENT OF LADIES AND GENTLEMEN SUFFERING FROM MENTAL DISEASES.

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Telegrams:
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A Private HOME for the treatment of Gentlemen suffering from Mental Diseases. Bracing hill country. See "Medical Directory," p. 2119. Apply to Medical Superintendent. Telephone: 10, P.O.Church-Stretton.

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A Private Hospital for Cure of Ladies and Gentlemen suffering from **Nervous** and **Mental Diseases.** Extensive pleasure grounds. **Private Suites of Rooms** with Special Attendants available. **Boarders** taken without certificates. **French Chef. Terms from 2 to 20 guineas weekly. Patients sent for.**
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A HOSPITAL FOR MENTAL DISEASES.

CHEADLE, CHESHIRE.

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The object of the above is to provide the most efficient means for the cure of mental diseases in those who belong to the **upper and middle** classes.

Voluntary boarders as well as certified patients are received for treatment.

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This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of Mental Cases.

For terms, &c., apply to the Resident Physicians.

Telephone—No. 2, Plympton. Dr. ALFRED TURNER, Dr. J. C. NIXON.

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HOSPITAL FOR MENTAL DISEASES.

President: The Right Hon. the Earl MANVERS.

This Institution is exclusively for the reception of a limited number PRIVATE PATIENTS of both sexes, of the UPPER and MIDDLE CLASSES, at moderate rates of payment. It is beautifully situated in its own grounds, on an eminence a short distance from Nottingham, and commands an extensive view of the surrounding country; and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted.

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FOR THE TREATMENT OF NON-PAUPER PATIENTS WITH INFECTIOUS FEVER.

Part payment required, balance found by the Hospital. A few private rooms for such as can pay four guineas a week. HELP VERY MUCH NEEDED. No aid received from the rates. Subscribers' Domestic Servants removed and treated free. For admission, apply to the Secretary.

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FOR THE UPPER AND MIDDLE CLASSES ONLY

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This Institution is a Registered Hospital under the Lunacy Act for the reception of private patients of the Upper and Middle Classes only.

It is pleasantly situated, and is surrounded by more than 100 acres of park and pleasure grounds.

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Patients paying higher rates can have Special Attendants, Horses and Carriages, and Private Rooms in Villas in the Hospital grounds, or at Moulton Park, a Branch Establishment two miles from the Hospital.

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For further particulars apply to the Medical Superintendent.

NAT. TELEPHONE No. 56.

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Patients belonging to the Hospital (or Boarders) may go for long or short periods, and can have, if they prefer it, Private Rooms in Villas in the Park.

For further particulars apply to the Medical Superintendent, St. Andrew's Hospital, Northampton.

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Telegraphic Address: "Relief, Old-Catton."
Telephone: "290, Norwich."

NERVOUS & MENTAL AFFECTIONS.

Ladies only received.

The Grove, Old Catton, near Norwich.

A **High-class Home** for the **Curative Treatment** of Nervous Affections. Situated a mile from the City of Norwich. **Special** and **Separate** accommodation is provided for those suffering from **Hysteria** and for cases of **Incipient Mental** trouble, who can be received as **Voluntary Boarders** without certificates and occupy their own private suites of apartments. A staff of experienced nurses has been organised to take charge of patients in their own homes. For terms, &c., which are moderate and inclusive, apply to the Misses MCLINTOCK, or to CECIL A. P. OSBURNE, F.R.C.S.E., &c., Medical Superintendent.

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A HOME for NERVOUS and MENTAL CASES.

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A PRIVATE HOME for the Care and Treatment of a limited number of Ladies Mentally Afflicted.

Climate healthy and bracing.

Apply to Dr. McClintock, Proprietor and Resident Medical Superintendent.

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PRIVATE HOSPITAL FOR THE TREATMENT OF NERVOUS AND MENTAL CASES, POLTON, MIDLOTHIAN.

NEW SAUGHTON HALL, which takes the place of Saughton Hall, established in 1798, is situated seven miles south of Edinburgh, in the beautiful neighbourhood of Hawthornden and Rosslyn, and is surrounded by picturesque and well-timbered pleasure grounds extending to 125 acres. There is also a SEASIDE HOUSE at GULLANE, EAST LOTHIAN.

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Telegrams:
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GREEN LANES, FINSBURY PARK, N.

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Telephone:
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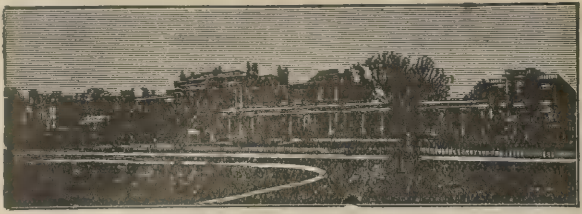

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A PRIVATE MENTAL HOSPITAL for the UPPER and MIDDLE CLASSES ONLY, EITHER VOLUNTARY or UNDER CERTIFICATE

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For further particulars and forms of admission apply Resident Proprietor, Haydock Lodge, Newton-le-Willows.

Telegraphic Address: "STREET, Ashton-in-Makerfield." Telephone: 11 Ashton-in-Makerfield.

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References: Sir THOMAS CLOUSTON, Dr. YELLOWLEES, Dr. RISIEN RUSSELL, and others.

Terms and particulars on application to "Superintendent, The Retreat, Newmains, Lanarkshire." Nearest station, Hartwood, Cal. Rly.

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Telegrams: "NOROTORIUM, BECKENHAM." Resident Medical Superintendent: FRANCIS HARE, M.D. *Telephone:* [illegible] BROMLEY.

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Ten minutes' walk from stations on Great Central (half hour from London), Metropolitan, and L. & N. W. Railways.

For the treatment of Gentlemen under the Act and privately. Established 1883 by an association of prominent medical men and others for the study of inebriety, profits, if any, are expended on the institution. Large secluded grounds on the bank of the river Colne. All kinds of out-door and in-door recreations and pursuits. Terms from 3 guineas weekly.—For particulars, apply to F. S. D. HOGG, M.R.C.S., &c., Resident Medical Superintendent. Telephone: 16 Rickmansworth.

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near COCKERMOUTH, CUMBERLAND. Licensed under the Inebriates Acts. FOR GENTLEMEN ONLY. Privately and under the Acts.

Patients are here treated individually on sound scientific methods, which combine physical and psychical treatment necessary to such cases. The situation of the house in the heart of the English Lake District *is ideal for the purpose to which it is being put.* Private golf course and lake with good trout and coarse fishing, lawn tennis, billiards, workshops, dark room, &c. Good library. References to leading consultants and practitioners. Terms moderate.—Particulars from J. W. ASTLEY COOPER, L.R.C.P., &c., Licensee and Superintendent. Telegrams: "Cooper, Buttermere."

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BUNTINGFORD, HERTS.

Licensed under the Inebriates Acts, 1879-99.

For Gentlemen suffering from Alcohol and Drug Inebriety; also for Gentlemen Convalescing after Illness. In a most healthy part of the country. 1[illegible] acres of grounds; about 350 feet above sea-level. Electric Light throughout from Private Installation. Golf, Cricket, Tennis, Rifle Range, Croquet, Library, Billiards, Photographic Dark Room, Gardening, Open Air Bath, Carpenter's Shop, Poultry, &c. Quarter mile from Station, G.E.R. Two Resident Physicians.

No Infectious or Consumptive Cases taken. Inebriety Patients are admitted voluntarily only, either privately or under the Inebriate Acts.

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Alcohol and Drug Inebriety and Neurasthenia.

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(Under the direction of an Advisory Council of eminent Medical Men.)

NEURASTHENIA is treated on approved principles, and there are Open-air Shelters in the grounds for suitable patients.

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The Sanatorium stands 450 feet above the sea, faces south, and looks out over the Firth of Forth. The climate is dry and bracing. All out-door and in-door sports. First-class private golf course. Excellent mixed shooting over 1600 acres, fishing, tennis, gardening, carpentry, &c. Billiard room (two tables), music room, large private library.

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For all particulars of Invernith Sanatorium, Ltd., apply to the *Resident Medical Superintendent*, W. H. BRYCE, M.B., C.M.

Telegrams: "Salubrious," Upper Largo. Telephone No 8, Upper Largo. Station—Kilconquhar (N. B. Railway).

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This Sanatorium, one of the finest and most beautifully situated in Europe, stands at an elevation of 800 feet in grounds of 460 acres which ascend to an elevation of 1,100 feet, and embrace woods, moorland, and a home farm.

Modern Laboratory methods and X-rays used for diagnosis, prognosis, and regulation of treatment.

It is fully and efficiently staffed and elaborately equipped with every appliance for the medical treatment, comfort, and convenience of patients.

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For Prospectus apply to THE SECRETARY.

Telegrams: "Sanatorium, Milnathort." *Telephone: No. 9 Milnathort.*

MUNDESLEY SANATORIUM

Specially built for the Treatment of Pulmonary and other forms of Tuberculosis. Aspect S.S.W. on a carefully chosen site. Pure, bracing air. High sunshine record. One mile from the coast. Electric light throughout. Full Nursing Staff.

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PENDYFFRYN HALL SANATORIUM

(NORDRACH-IN-WALES).

Physician: GEORGE MAGILL DOBSON, B.A., M.B., B.Ch.

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TREATMENT OF DISORDERS OF THE STOMACH AND INTESTINES, DIABETES, GOUT,

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The House is fitted with Laboratories, X-ray Installation, Medical Baths, and Lifts.

The climate is mild, and the rainfall the lowest in Scotland.

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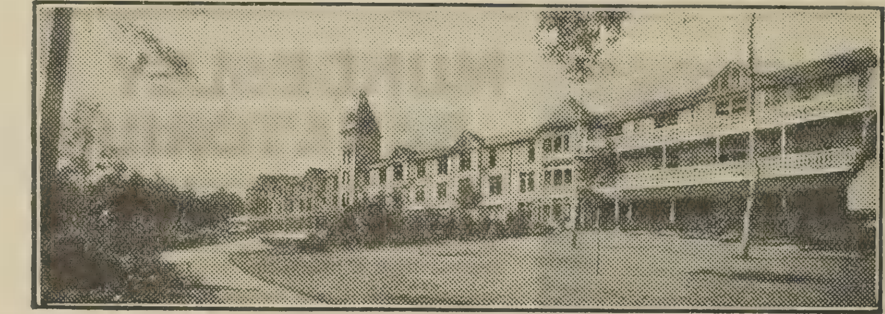

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Open-Air Treatment of CONSUMPTION and Allied Diseases.

TUBERCULIN & VACCINE TREATMENT associated with Laboratory Control is available for all patients residing in this Sanatorium.

Research Laboratory. Fully Equipped Throat Room. Roentgen Ray and Ultra Violet Light Installations.

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Old-established, beautifully situated. 300 acres of Sanatorium grounds. Pinewoods and sheltered avenues. Altitude 850 feet. Porous subsoil. Separate châlets, with verandahs, hot-water radiators, and electric light. Special features—breathing and graduated exercises, and continuous inhalation. Individual attention. *Resident Physician*—**C. MUTHU, M.D., M.R.C.S., L.R.C.P.**

Terms 3 guineas weekly. For particulars apply, **SECRETARY, Hillgrove, Wells, Somerset.**

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This Sanatorium (opened 1901) is established for the Treatment of Tuberculosis as carried out by Dr. OTTO WALTHER of Nordrach. It is situated in the midst of a large area of park-land, at a height of 450 feet above the sea-level, on the western slopes of mountains rising to over 1800 feet, which protect it from North and East winds and provide many miles of carefully graduated uphill walks—similar in character and extent to those at Nordrach.

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HYDROPATHIC ESTABLISHMENT

MATLOCK. Established 1853.

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A large staff (upwards of 50) of Trained Male and Female Nurses, Masseurs, and Attendants. Prospectus and full information on application to H. CHALLAND, Manager.

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The Colony system ensures for epileptics the social life and employment best suited to their needs.

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For further information apply to the Director, Dr. McDougall, Warford, near Alderley Edge, Cheshire.

SCHOOL FOR EPILEPTIC BOYS.

Colthurst House, Warford,
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Under the Management of the Committee of the David Lewis Colony.

Home Life, Medical Care, and suitable Education for Boys subject to Epilepsy. Terms 30s. weekly. Further particulars may be obtained from Dr. ALAN McDOUGALL, The Colony, Alderley Edge.

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2150 feet. **SWITZERLAND.**

MEDICAL INSTITUTE for the treatment of the DIGESTIVE ORGANS, DIABETES, OBESITY, Anæmia, Gout, Chronic Kidney Disease, and Diseases of the Heart and Circulation.

All modern installations. No cases of Tuberculosis. Open all the year. **Dr. WIDMER,** Head Doctor.

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Madeira. — Wanted, a Resident PATIENT in an English Doctor's house. Tennis, motoring, &c. —Apply, Dr. Geddes Scott, Funchal, Madeira.

Resident Patients.—List of Doctors in all parts receiving Resident Patients, with description of accommodation, terms, &c., can be had without charge from The General Manager, 22, Craven-street, Strand, W.C., or selection will be made on statement of nature of case and means.—Telephone, No. 1854 Gerrard.

St. Andrew's Hospital, Dollis-hill, London, N.W.—Tel.: Willesden, 898. A Hospital for Paying Patients of limited means. Medical and Surgical, but not Mental or Contagious cases. Moderate inclusive terms. Resident and Visiting Medical Staff; Trained and Certificated Nurses.

Special terms to Refugees. Apply, The Matron.

City of London Mental Hospital,

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For particulars apply to the Medical Superintendent as above.

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North Lonsdale Hospital, Barrow-in-Furness. — Wanted at once, MALE HOUSE SURGEON. Salary £150 per annum, with residence, board, and laundry. Applications, accompanied by not more than three recent testimonials, to be sent to the Secretary.

Second Assistant Medical Officer required. Salary £250, rising £10 per annum to £300, with furnished apartments, board, laundry, and attendance.

Applications, stating qualifications, to the Medical Superintendent, WEST SUSSEX COUNTY MENTAL HOSPITAL, Chichester.

Royal Cornwall Infirmary, Truro (52 beds).—HOUSE SURGEON (male or female, unmarried), required. Salary £150, rooms, board, and washing.

Apply, with copies of three recent testimonials, to Secretary, of whom further particulars may be obtained.

Clayton Hospital Wakefield. — Wanted, SENIOR HOUSE SURGEON for 1st January, 1915. Salary £160, with board, lodging, and laundry. Number of beds 105. Applications to be sent at once, with copies of three recent testimonials, to ARTHUR H. BARNES, Hon. Sec.

Borough Hospital, Birkenhead.— Wanted, JUNIOR HOUSE SURGEON. Salary £100 per annum, with board and laundry. Duties include Anæsthetics, Casualties, and Out-patients.

Apply to Secretary at the Borough Hospital

Royal Waterloo Hospital for Children and WOMEN, S.E.—There is an immediate vacancy for One RESIDENT MEDICAL OFFICER for the duration of the war only. Salary at the rate of £150 per annum, with board and washing. Applications should be sent, with copies of three recent testimonials, to the Secretary at the Hospital.

Scarborough Hospital and Dispensary. —Wanted, SENIOR and JUNIOR HOUSE SURGEONS. Salary £100 and £80 per annum respectively, with board, residence, and allowance for laundry.

Applications, with testimonials, to be sent to the Honorary Secretary, from whom further particulars may be obtained.

W. SAYNER, Hon. Secretary.

Kent County Asylum, Maidstone.—MALE JUNIOR ASSISTANT MEDICAL OFFICER wanted Candidates must be fully qualified, registered, and unmarried.

Salary £250 per annum, with full board, furnished quarters, attendance, coal, gas, and washing.

Applications, stating age, qualifications, &c., accompanied by not [illegible] than three testimonials, to be sent at once, addressed Medical Superintendent, Asylum, Maidstone.

The appointment will be made subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

Beckett Hospital and Dispensary, Barnsley.—SECOND HOUSE SURGEON required at once who would be eligible for appointment [illegible] Senior House Surgeon when the post falls vacant. Must have [illegible] Medical and Surgical qualification in the United Kingdom. Must be unmarried and under thirty. New Eye and X Ray Department. 110 beds, fifty now occupied by wounded.

Salary £100, with apartments, board, and laundry provided.

Applications and testimonials should be sent to the undersigned at once. R. F. PAWSEY, Honorary Secretary.

8, Regent-street, Barnsley, 23rd November, 1914.

King Edward VII.'s Hospital, Cardiff (CARDIFF INFIRMARY).—(General Hospital: 275 beds, 100 of which are occupied by wounded soldiers.)—TWO HOUSE SURGEONS required. Candidates must be registered in Medicine and Surgery under the Medical Act. The duties include the administration of Anæsthetics. The appointment will be for six months, subject to renewal. Salary at the rate of £140 per annum each, with board, residence, and laundry.

Applications, endorsed "House Surgeon," stating age, qualifications, &c., with copies of recent testimonials, should be sent to the undersigned, from whom further particulars may be obtained.

LEONARD D. REA, Secretary and Gen. Supt.

University of London.—Notice is hereby given that the Senate will shortly proceed to elect EXAMINERS in the following subjects for the year 1915–16:—

HIGHER EXAMINATIONS FOR MEDICAL DEGREES.

EXAMINERSHIPS.	PRESENT EXAMINERS.
FOUR IN MEDICINE	NORMAN DALTON, M.D., F.R.C.P. JAMES GALLOWAY, M.A., M.D. W. B. WARRINGTON, M.D., Ch.B. Vacant.
FOUR IN SURGERY	FREDERICK F. BURGHARD, M.D., M.S. Prof. WILLIAM F. HASLAM, M.B., Ch.B. WILLIAM TURNER, M.B., M.S. Vacant.
TWO IN OBSTETRIC MEDICINE	Prof. WALTER C. SWAYNE, M.D., B.S., Ch.B. Vacant.
TWO IN PATHOLOGY	Prof. F. W. ANDREWES, M.A., M.D., B.Ch., D.P.H. Vacant.
TWO IN FORENSIC MEDICINE AND HYGIENE	E. P. MANBY, B.A., M.D., D.P.H. Vacant.
TWO IN MENTAL DISEASES AND PSYCHOLOGY	MAURICE CRAIG, M.A., M.D., B.Ch. Vacant.
TWO IN STATE MEDICINE ...	THOMAS MORISON LEGGE, M.A., M.D., D.P.H. Vacant.

FIRST EXAMINATION AND SECOND EXAMINATION PART I., FOR MEDICAL DEGREES.

[Candidates for these Examinerships should be experienced in Teaching Medical Students.]

TWO IN GENERAL BIOLOGY...	M. DAVENPORT HILL, M.A. Vacant.
TWO IN CHEMISTRY	HENRY FORSTER MORLEY, M.A., D.Sc. Vacant.
TWO IN PHYSICS	SIDNEY RUSS, D.Sc. Vacant.

SECOND EXAMINATION PART II., FOR MEDICAL DEGREES.

TWO IN ANATOMY...	ALEXANDER MACPHAIL, M.B., C.M Vacant.
TWO IN PHYSIOLOGY (Examiners in Faculty of Science also)	Prof. E. H. STARLING, M.D., B.S., F.R.S. Vacant.

The Examiners above named are re-eligible, and intend to offer themselves for re-election.

Full particulars of the remuneration of each Examinership can be obtained on application to the Principal.

N.B.—Attention is drawn to the provision of Statute 124, whereby the Senate is required, if practicable, to appoint at least one Examiner who is not [illegible] Teacher of the University.

Candidates must send in their names to the Principal, with any attestation of their qualifications they may think desirable, on or before WEDNESDAY, DECEMBER 30th. (It is particularly desired by the Senate that no application of any kind be made to its individual Members.)

If testimonials are submitted, three copies at least of each should be sent. Original testimonials should not be forwarded in any case. If more than one Examinership is applied for, a separate complete application, with copies of testimonials, if any, must be forwarded in respect of each. By order of the Senate.

University of London, HENRY A. MIERS, Principal.
South Kensington, S.W., November, 1914.

Swansea General and Eye Hospital, (161 beds).—HOUSE SURGEON wanted. Salary £125 per annum, with board, washing, and attendance. Candidates, who must be fully qualified, are requested to send their applications, stating age, experience, and qualifications, with three testimonials (typewritten copies preferred) to the undersigned.

W. D. HUGHES, Secretary.

Hulme Dispensary, Dale-street, Stretford-road, Manchester.—Wanted, a HOUSE SURGEON (ladies eligible), duly registered and fully qualified. Salary £180 per annum. Annual increase £10 to £200, with apartments, attendance, coal, and gas.

Applications, with testimonials, at once to Honorary Medical Secretary.

Bedford County Hospital.—Wanted, an ASSISTANT HOUSE SURGEON, unmarried (male), to act as House Surgeon. Candidates must be duly qualified in medicine and surgery. Salary £100 per annum, with board, lodging, and laundry.

This Hospital is approved by the University of London for the purposes of the M D. and M.S. Examinations.

Applications, with particulars and three recent testimonials, must be sent to BEAUCHAMP WADMORE, Secretary.

December 14th, 1914.

The Royal Infirmary, Sheffield.

HOUSE SURGEON and ASSISTANT HOUSE PHYSICIAN.

Wanted, Two Male Resident Medical Officers for the above posts. There are nine Residents. Salary £100 per annum, with board and residence.

Applications, with copies of testimonials, to be sent immediately to Board Room, 15th December, 1914. JNO. W. BARNES, Secretary.

Nottingham General Hospital.—Wanted, a SENIOR HOUSE PHYSICIAN (lady or gentleman). Salary £120 per annum, with board, residence, and laundry in the Hospital.

Applications, stating age, with testimonials, to be addressed to the Secretary. By order.

October 3rd, 1914. E. M. KEELY, Secretary.

The Guest Hospital, Dudley (105 beds).—Wanted, an ASSISTANT HOUSE SURGEON, qualified. Salary £100 per annum, with residence, board, and washing. Appointment for six months.

Applications, stating age and nationality, and accompanied by not more than six testimonials, to be sent to the Secretary at the Hospital at once.

The Sheffield Royal Hospital.—Open Appointment.—Wanted, an ASSISTANT HOUSE PHYSICIAN (Seventh Resident). Candidates must be registered medical practitioners and unmarried. Ladies are ineligible. Salary £80, with board, lodging, and washing.

Applications, with copies of testimonials, should be sent, addressed to me, as early [illegible] possible.

The Board Room. JOE W. ROBINSON, Secretary.

West Riding of the County of York.—SCALEBOR PARK ASYLUM, Burley-in-Wharfedale.—Wanted, ASSISTANT MEDICAL OFFICER. Salary £250 per annum, with furnished rooms, board, attendance, and washing. The appointment will be made subject to the provisions of the Asylums Officers' Superannuation Act, 1909, or LOCUM TENENS for the winter months. Salary £5 5s. per week. Applications, with copies of three recent testimonials, to be sent to the Medical Superintendent.

Manchester Royal Eye Hospital.—The Board of Management desire to receive applications for the position of JUNIOR HOUSE SURGEON (man or woman) to live in the Hospital and devote full time to the duties of the post. Candidates must be legally qualified. Salary £80, with residence, board, and washing. The position is for not more than two years, and subject to three months' notice. Applications, with testimonials, endorsed "House Surgeon," must be addressed to the Chairman of the Board of Management. W. S. PROPHET, Secretary.

Ingham Infirmary and South Shields and WESTOE DISPENSARY.—Wanted, JUNIOR HOUSE SURGEON (Male). Salary £115 per annum, with residence, board, and washing. No out-visiting. Candidates must hold registered qualifications in Medicine and Surgery. The appointment will be terminable by one month's notice.

Applications, stating age and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

Ingham Infirmary, South Shields. JOHN POTTER, Secretary.

Royal Infirmary, Preston.—Wanted at once, an ASSISTANT RESIDENT MEDICAL and SURGICAL OFFICER. Beds 138, with Out-patient Department, X Ray and Electrical Department, and Pathological Laboratory.

Salary £120 per annum, with board, residence, and laundry.

No home visiting.

Applications, stating age, qualifications, and experience, together with copies of testimonials, to be sent to the undersigned, from whom further particulars of the appointment may also be obtained.

5, Winckley-street, Preston. WALTER DAVIES, Secretary.

Manchester Education Committee.—Wanted, an ASSISTANT SCHOOL MEDICAL OFFICER (woman), unmarried. Salary £300 per annum, rising by annual increments of £25 to £450 per annum, together with £10 per annum for travelling expenses. Particulars of duties may be obtained by sending stamped, addressed envelope to the undersigned. All applications must be received not later than January 9th, 1915.

SPURLEY HEY, Director of Education.

Education Offices, Deansgate, Manchester.
12th December, 1914.

Corporation of Newcastle-upon-Tyne. CITY HOSPITAL for INFECTIOUS DISEASES.—Wanted immediately, a male RESIDENT MEDICAL ASSISTANT, who holds a registrable qualification in medicine and surgery, and possesses some practical knowledge of Bacteriology. The Hospital contains special pavilions for military cases. Terms £250 per annum, with board, lodging, &c. Applications, stating age, qualifications, and previous experience, with copies of not more than three recent testimonials, to be forwarded to the Medical Officer of Health, Health Department, Town Hall, Newcastle-upon-Tyne.

The Royal Infirmary, Sunderland.—Wanted, SENIOR RESIDENT MEDICAL OFFICER (Surgeon), and Two JUNIOR HOUSE SURGEONS. Candidates must be duly qualified and registered, and, if applicants for the Senior Appointment, have had some previous hospital experience.

Salaries:—Senior, £150, Juniors £120 per annum, with board, residence, and laundry. There are 212 beds for patients.

Applications, stating age, with copies of three recent testimonials to be sent to the undersigned. The successful candidates to enter upon their duties so soon as may be conveniently arranged.

December 10th, 1914. THOMAS ROBINSON, Secretary.

City of Westminster Union.—The Guardians require a SECOND ASSISTANT MEDICAL OFFICER for the Infirmary in the Fulham-road, S.W. Remuneration £160 per annum, rising £10 yearly to £180 per annum, with board, residence, and washing.

Particulars of the duties may be obtained upon personal application to the Medical Superintendent any day between 12 and 1.30 P.M., or forms of application may be obtained upon forwarding to him a stamped, addressed envelope.

Applications to be made to the Medical Superintendent at the Infirmary before Thursday, the 31st December.

9th December, 1914.

City of Westminster Union.—The Guardians require a THIRD ASSISTANT MEDICAL OFFICER for the Infirmary in the Fulham-road, S.W. Remuneration £140 per annum, rising £10 yearly to £160 per annum, with board, residence, and washing.

Particulars of the duties may be obtained upon personal application to the Medical Superintendent any day between 12 and 1.30 P.M., or forms of application may be obtained upon forwarding to him a stamped, addressed envelope.

Applications to be made to the Medical Superintendent at the Infirmary before Thursday, the 31st December.

9th December, 1914.

Royal Gwent Hospital (126 beds).—Wanted, RESIDENT MEDICAL OFFICER, registered Medical and Surgical qualifications. Salary at the rate of—first six months, £100 per annum; second six months, £125 per annum; third six months, £150 per annum, with board, residence, and laundry (no stimulants provided). There are three positions to be occupied during the 18 months. The offices are as follows: Casualty Officer, House Physician, and House Surgeon.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be sent to the undersigned.

J. K. MILLWARD, Secretary-Superintendent.

Royal Gwent Hospital, Newport, Mon.

The Royal Gwent Hospital, Newport, Mon.—HONORARY MEDICAL OFFICER to the Ear, Nose, and Throat Department.—The Board of Directors invite applications for the post of Honorary Medical Officer to the Ear, Nose, and Throat Department now about to be formed.

Applications, stating qualifications and experience, should be sent to the undersigned on or before Monday, January 9th, 1915.

Canvassing is prohibited.

J. K. MILLWARD, Secretary-Superintendent.

Hospital Offices, Newport, Mon., December 14th, 1914.

Notts County Council.—Appointment of RESIDENT MEDICAL OFFICER at the RANSOM SANATORIUM, Sherwood Forest, Mansfield.—Applications are invited from duly qualified and registered medical practitioners (either male or female) for the above post. Salary £200 per annum, with board, residence, and laundry in the Sanatorium. Applicants should have some knowledge of tuberculin treatment, and will be required to take charge of the Tuberculosis Laboratory in the Sanatorium. The person appointed will be expected to enter on the duties of the office early in April, 1915.

Applications, stating age (which should not exceed forty years), qualifications, and previous experience, must be accompanied by copies of not more than three recent testimonials, and must be received by me not later than the afternoon of Thursday, the 31st day of December, 1914.

By order.

H. HAMPTON COPNALL, Clerk of the County Council.

Shire Hall, Nottingham, December, 1914.

City of Birmingham Mental Hospital, Rubery Hill, Birmingham.—Wanted, JUNIOR ASSISTANT MEDICAL OFFICER (female). Salary £200 per annum, with furnished apartments, board, laundry, &c. Applications, with copies of three testimonials, to be sent to the Medical Superintendent of the Mental Hospital.

Salisbury Infirmary.—Wanted, an ASSISTANT HOUSE SURGEON (having charge of the medical beds). Salary £75 per annum, with apartments, board, lodging, and washing. Candidates must be unmarried, fully qualified, and registered.

All applications, with testimonials, to be sent to the undersigned, of whom the rules relative to the duties may be had on application.

The duties will commence from the date of appointment.

Canvassing by or on behalf of the candidates will disqualify.

Dated the 8th December, 1914. S. B. SMITH, Secretary.

Warrington Infirmary & Dispensary. The Board of Management of this Voluntary Hospital (which is one of the best equipped in Lancashire and serves a population of 150,000, and at which, consequently, plenty of experience is to be obtained), invite applications for the post of SENIOR HOUSE SURGEON.

Salary commencing at the rate of £200 per annum, with board, apartments, and laundry.

Candidates must be registered in Medicine and Surgery, and have had previous hospital experience.

Applications, stating age, with copies of three recent testimonials, should be sent to reach the undersigned as early as possible, as the vacancy has arisen owing to the late Resident Surgeon having volunteered and been called up for active service.

J. H. J. HAMPSON, Secretary.

West Bromwich and District Hospital (86 beds; Out-patient attendances 36,000).—Wanted, HOUSE SURGEON and ASSISTANT HOUSE SURGEON for this institution. Candidates must be doubly qualified, duly registered, and unmarried. (Ladies not eligible.)

Salary: House Surgeon £150 per annum, Assistant House Surgeon £120 per annum, with residence, board, and laundry.

Applications, endorsed "House Surgeon" or "Assistant House Surgeon" as the case may be, stating age, qualifications, and previous experience, and accompanied by copies of three recent testimonials, must be sent to the Hon. Secretary, THOS. FOLEY BACHE, Esq., Churchill House, West Bromwich, immediately.

By order of the Board.

FRANK I. HANCOCK, Secretary.

Northamptonshire County Council.—EDUCATION COMMITTEE.—ASSISTANT SCHOOL MEDICAL OFFICER.—The Education Committee are about to appoint a temporary Assistant School Medical Officer. Subject to satisfactory service the appointment will be for the duration of the war.

A salary of £25 per month is offered, and in addition travelling expenses will be paid.

A statement of the duties and conditions attaching to the appointment can be obtained on application to the County Education Offices, Northampton.

Applications, together with not more than three recent testimonials, must be lodged with the undersigned not later than Thursday, 31st December, 1914.

By order of the Committee.

J. L. HOLLAND, Secretary for Education.

Bradford Poor-law Union.—ASSISTANT RESIDENT MEDICAL OFFICER (lady or gentleman).—Wanted, an Assistant Resident Medical Officer for the St. Luke's Hospital and Union House of the above Union.

Salary £150, with rations, apartments, and washing.

The appointment will be for one year. Candidates must be duly qualified, unmarried, and the person appointed must act under the direction of the Medical Officer and the regulations of the Guardians.

The St. Luke's Hospital is divided into Medical and Surgical Wards, and facilities are provided for Pathological and Bacteriological work.

Applications, giving age and full particulars of experience and qualifications, accompanied by testimonials of character and ability, to be sent to me as early as possible.

By order.

GEORGE M. CROWTHER, Clerk to the Guardians.

Union Offices, 22, Manor-row, Bradford, 7th December, 1914.

Wanted, by the Jharia Board of HEALTH for the JHARIA MINING SETTLEMENT, Bihar, India, a Chief SANITARY OFFICER on a pay of Rs. 1200 (£80), rising to Rs. 1500 (£100) a month, with a free house or allowance in lieu thereof. The leave rules will be the same as those for employees of District Boards in Bihar and Orissa. Travelling allowance at first class Government rates will be given. Only fully qualified medical men possessing a European Diploma of Public Health with previous experience of sanitary work need apply. Applicants must be under the age of forty-five. The selected candidate will be expected to sign a contract of employment for five years, terminable at any time by either party on six months' notice. He should join his appointment at once. If in England he will be given a free passage. The appointment is subject to the approval of Government, in whom the power of appointment is vested under the Act. Applications will be received by the undersigned up to 15th February, 1915.

S. R. HIGNELL, I.C.S.,
Deputy Commissioner of Manbhum, and Chairman
of the Jharia Board of Health.

Purulia, B. N. Ry., Bihar and Orissa, India.

Cumberland and Westmorland ASYLUM, Garlands, Carlisle.—Wanted, JUNIOR ASSISTANT MEDICAL OFFICER, unmarried. Salary £250, with board, lodging, and washing. The appointment is subject to the provisions of the Asylum Officers' Superannuation Act.

Apply, stating age, with testimonials, to the Medical Superintendent.

Croydon General Hospital. — The post of SENIOR HOUSE SURGEON is about to become vacant. Salary £105 per annum, with residence, board, and laundry. Candidates must possess Medical and Surgical qualifications. Applications, stating age, &c., accompanied by copies of three testimonials, to be sent to me at the Hospital.

London-road, Croydon, 16th Dec., 1914. J. JONES, Secretary.

Kent County Asylum, Chartham, near Canterbury.—JUNIOR ASSISTANT (THIRD) MEDICAL OFFICER (male) required. Salary commencing at £250, with furnished quarters and attendance, coal, gas, milk, garden produce, washing, and board. The appointment is subject to the provisions of the Asylums Officers Superannuation Act. Applications, stating qualifications, &c., with copies of three recent testimonials, to Medical Superintendent.

Brighton. — The Royal Alexandra HOSPITAL for SICK CHILDREN (61 beds). — A HOUSE SURGEON required. Salary at the rate of £100 a year, with board, lodging, and washing. Good experience. Ample time for study. No canvassing allowed.

Further particulars may be obtained of

A. F. GRAVES, Secretary.

Bridgwater Hospital.—Wanted, a HOUSE SURGEON (male or female), unmarried, under thirty, fully qualified and registered. Salary at the rate of £125 per annum, with board, lodging, and washing. Duties to commence on or about January 11th, 1915. Applications, with copies of not more than three testimonials, should be sent to the Honorary Secretary immediately.

Bank Chambers, Bridgwater. EDWARD TREVOR, Hon. Sec.

Cancer Hospital (Free), Fulham-road, London, S.W.—The Committee are prepared to receive applications for the post of SURGICAL REGISTRAR. Candidates must be fully qualified. Honorarium £100 per annum. Copies of the rules can be obtained from the Secretary. Applications, accompanied by copies only of three testimonials, must reach the Secretary not later than noon, Tuesday, 5th January, 1915.

FRED W. HOWELL, Secretary.

Hull City Asylum.—Wanted, Junior ASSISTANT MEDICAL OFFICER (lady). Salary £200 per annum, with board, lodging, and washing,

Applications, addressed to the Committee of Visitors, stating age and experience, together with copies of not more than three recent testimonials, to be sent to the Medical Superintendent at the Asylum, Willerby, near Hull, before the 6th of January, 1915.

Yardley Road Sanatorium (199 beds) and the ANTI-TUBERCULOSIS CENTRE, Birmingham. — Wanted, a fully qualified and registered THIRD ASSISTANT MEDICAL OFFICER for the above institution.

Salary £200 per annum with board and residence.

Applications, stating age, general and tuberculosis experience, with copies of three testimonials (terms of appointment three months' notice on either side) to the Medical Superintendent, The Sanatorium, Yardley-road, Birmingham. G. B. DIXON.

St. Mary's Hospital for Women and CHILDREN, Plaistow, E.—A RESIDENT MEDICAL OFFICER required immediately. Salary at the rate of £90 per annum, with board, residence, and laundry, and an honorarium of £10 on completion of six months' service. The hospital is a general hospital for women and children, has 42 beds and special departments for Diseases of Eye, Ear, Nose and Throat, Diseases of Women, and X-Rays.

Applications, with copies of three recent testimonials, to be sent to

N.B.—Ladies are invited to apply. A. ERNEST WILKES,
8th December, 1914. Secretary.

Stoke-upon-Trent Union.—Appointment of ASSISTANT RESIDENT MEDICAL OFFICER.—The Guardians of the Poor of the above-named Union invite applications (male or female) for the appointment of an Assistant Resident Medical Officer for their institution and hospital, situate at London-road, Newcastle, Staffs. The institution has beds for 1289 inmates (present number of inmates 1000), 447 of which are in hospital, maternity, and isolation wards, and 180 in lunacy wards, possesses an up-to-date operating theatre, and is a training school for nurses. Further particulars will be furnished upon application.

The appointment will be subject to the approval of the Local Government Board.

Salary £200 per annum inclusive, with rations, furnished apartments, and washing. No extra fees.

Candidates must be single, duly qualified registered medical practitioners, and the lady or gentleman appointed must devote the whole of their time to the duties of the office.

Applications, stating age, qualifications, and experience, with copies of not more than three recent testimonials, to be sent to the undersigned not later than the 30th day of December, 1914.

T. WOOD, Clerk to the Guardians.
Union Offices, Stoke-on-Trent, 9th December, 1914.

National Hospital for Diseases of the HEART, Westmoreland-street, W. — RESIDENT MEDICAL OFFICER (male or female).—The Committee of Management invites applications for the post of Resident Medical Officer (male or female). The appointment is for a period of six months, but may be renewed for a further period of six months. Salary at the rate of £80 per annum, with board, residence, and washing. Candidates must be fully registered medical practitioners; they are not required to call upon the medical staff, but will be expected to attend the meeting of the Medical Committee.

Applications, stating age, and accompanied by six copies of three recent testimonials, should be addressed to me immediately.

ROBERT G. E. WHITNEY, Secretary.

Edmonton Union (500 beds).— SECOND ASSISTANT MEDICAL OFFICER.—The Guardians of the Edmonton Union require the services of a Second Assistant Medical Officer (male) at their Infirmary, 77, Bridport-road, Upper Edmonton. Commencing salary £160 per annum, with residential allowances.

Applicants must be single men not under twenty-four years of age, and must be fully qualified and registered; a graduate preferred. Previous hospital and anæsthetic experience desirable.

Any further information regarding the appointment can be obtained from Spencer Mort, F.R.C.S., M.D., F.R.S.E.

Applications, on forms which may be obtained from me by sending a stamped addressed foolscap envelope, must be received by me not later than the 5th January, 1915.

White Hart-lane, Tottenham, N. F. SHELTON, Clerk.

City and County of the City of Chester. —ASSISTANT MEDICAL OFFICER OF HEALTH.—Applications are invited for the appointment of Assistant Medical Officer of Health for the City of Chester, at a salary of £300 per annum. The work will include, among other duties, school medical inspection, and the whole time of the officer must be given to the duties of the office.

Candidates shall be between the ages of twenty-five and forty years, and shall possess recognised qualifications in Medicine, Surgery, and Midwifery, and hold a Diploma in Public Health.

Canvassing, either directly or indirectly, will be a disqualification. Applications, accompanied by copies (not returnable) of four testimonials, on forms to be obtained from the undersigned, must be received not later than Monday, the 11th January next.

J. H. DICKSON, Town Clerk.
Town Hall, Chester, 16th December, 1914.

County Borough of Stoke-on-Trent. TUBERCULOSIS SANATORIUM.—Appointment of RESIDENT ASSISTANT MEDICAL OFFICER.—The Town Council invite applications for the position of Resident Assistant Medical Officer at the Stanfield Sanatorium and Assistant at the Tuberculosis Dispensary. Pending the provision of residential accommodation at the Sanatorium he will be required to reside near to the sanatorium, and the salary will be at the rate of £250 per annum inclusive. As soon, however, as residence is provided at the Sanatorium he will be required to reside there, and the salary will then be £200 per annum, with board and residence. He will act under the directions of the Tuberculosis Officer.

Applications, stating age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, and endorsed, "Resident Assistant Medical Officer," should be delivered to the undersigned not later than 12 noon on Friday, 1st January, 1915.

Canvassing members of the Council will be a disqualification.

E B. SHARPLEY, Town Clerk.
Town Hall, Stoke-on-Trent, Nov. 20th, 1914.

Tunbridge Wells General Hospital.— Wanted, a HOUSE SURGEON (unmarried, male). Candidates must be duly qualified in Medicine and Surgery. Anæsthetic experience essential. May be required to give lectures to the nursing staff.

Salary £100 per annum, with board, residence, &c., in the Hospital. Four weeks' holiday allowed per annum and a Locum provided.

This Hospital is approved by the University of London for the purposes of the M.D. and M.S. Examinations.

This Hospital is a section of the Central Military Hospital at Chatham, and is being largely used for the wounded; extra beds have been provided. At the present juncture, to avoid undue pressure, the cases, both Medical and Surgical, are equally divided between the two Residents, the Casualty work also being shared.

Applications, with certificate of registration and copies of testimonials, to be sent to the undersigned as soon as possible.

J. J. WEBB, Secretary.

North Riding of Yorkshire County COUNCIL.—EDUCATION COMMITTEE.—Temporary ASSISTANT SCHOOL MEDICAL OFFICER.—Applications are invited for the post of Temporary Assistant School Medical Officer.

The applicants, limited to males, must be legally qualified and registered, and should have had experience in diseases of children and diseases of the eye and ear.

The candidate appointed will be required to devote the whole of his time to the service of the Committee, to reside at such place as may be approved by the Committee, and to undertake such duties in connexion with school medical work as the Secretary or School Medical Officer may direct.

The salary will be at the rate of £300 per annum with a fixed allowance in addition to cover all expenses except stationery and postage.

Applications, accompanied by copies of three recent testimonials, to be submitted not later than 31st December, 1914, to the Secretary, Education Department, County Hall, Northallerton.

December 15th, 1914.

Lectureship on Chemical Physiology in EDINBURGH UNIVERSITY. — Applications for the above post may be sent to Professor Sir EDWARD SCHÄFER, University New Buildings, Edinburgh, from whom full particulars may be obtained.

The Lecturer is also an Assistant to the Professor of Physiology. The emoluments amount to £300 per annum.

Birkenhead and Wirral Children's HOSPITAL, Woodchurch-road, Birkenhead.—There is a vacancy for a HOUSE SURGEON (male or female), duly qualified and registered, at the above Hospital. Honorarium £100 per annum, with board, residence, and laundry.

Applications, with testimonials (copies), to be sent on or before the 14th January next to F. W. ARCHER, 14, Cook-street, Liverpool.

The General Infirmary at Leeds (520 beds).—Wanted, an OPHTHALMIC HOUSE SURGEON. Salary £50 per annum, with board, residence, and laundry. Six months' appointment.

Candidates must be legally qualified and registered.

Applications, with testimoninls, should be addressed to the Infirmary on or before January 7th, 1915.

FRED. J. BRAY, General Manager.

Bradford Royal Infirmary.—Male HOUSE SURGEON wanted immediately.

Candidates must be single, duly qualified, and registered. Salary £100 per annum, with board, residence, and washing. There are 210 beds and five Resident Officers.

Applications, stating age, qualifications, and previous experience, with copies of recent testimonials, to be received by the undersigned. Notice will be sent to selected candidates.

J. J. BARRON, Secretary-Superintendent.

St. George's Hospital, Hyde Park Corner, S.W.—Applications are invited for the post of SURGICAL REGISTRAR. Candidates must be registered medical practitioners, and preference will be given to those possessing the F.R.C.S. Eng. diploma. Salary £200 per annum. Particulars of the duties can be obtained on application to the Dean of the Medical School.

Applications, accompanied by copies of three testimonials, should be sent to the undersigned by Saturday, Jan. 2nd, 1915.

HENRY WINGROVE, Secretary.

Leicester Royal Infirmary.— OPHTHALMIC HOUSE SURGEON and ASSISTANT HOUSE PHYSICIAN (joint post). Two ASSISTANT HOUSE SURGEONS.—Vacancies have arisen in these three posts, and applications are invited therefor. Salaries at the rate of £100 per annum, with a bonus of £3 per calendar month during the continuance of the war, with board, apartments, and washing. Applications to be made to the undersigned forthwith. HARRY JOHNSON, House Governor and Secretary.

24th December, 1914.

Leicester Royal Infirmary.—Assistant RESIDENT MEDICAL OFFICERS.—The Committee desire it to be known that they are prepared to consider applications from lady doctors for two of the ASSISTANT RESIDENT posts in the institution, and lady candidates are invited to send in their applications to the undersigned forthwith, from whom further information may be obtained.

Appointments for six months, with board and apartments.

HARRY JOHNSON, House Governor and Secretary.

24th December, 1914.

Great Yarmouth Hospital (72 beds). —Patients treated during the year: In-patients, 546; Out-patients, 3632; Operations in theatre, 247; Minor operations in Out-patients' Department, 314.—HOUSE SURGEON (male, unmarried) required at once. Salary £200 per year, with board, lodging, and washing. Will be required to deliver Lectures to Probationer Nurses.

Applications, to be accompanied by not more than four testimonials, to be sent on or before noon on Monday, the 4th January, 1915, to

RICHARD F. E. FERRIER, Hon. Secretary.

16, South Quay, Great Yarmouth.

City and County of Newcastle-upon- TYNE EDUCATION COMMITTEE.—Applications are invited for positions as whole time ASSISTANT SCHOOL MEDICAL OFFICERS (one man, one woman). Salary £300 per annum, rising by annual increases of £10 to a maximum of £350 per annum, together with £5 per annum for travelling expenses.

Applications, to be made on forms which may be obtained from the undersigned, must be returned not later than Monday, the 28th December. PERCIVAL SHARP, Director of Education.

Education Office, Northumberland-road, Newcastle-upon-Tyne.

Birmingham and Midland Eye Hos- PITAL, Church-street, Birmingham.—Applications are invited from duly qualified gentlemen for the posts of SENIOR and JUNIOR HOUSE SURGEONS to this Hospital.

Salary of £110 and £100 respectively, residence and board, with £5 laundry allowance.

Applications, with testimonials, stating qualifications, &c., should be sent to the undersigned, from whom a copy of the Regulations defining the duties can be obtained.

Number of beds 110. Daily average attendance of Out-patients, 260.

J. W. PEARCE, General Supt. and Secretary.

County Asylum, Prestwich, Man- chester.—LOCUM TENENS required. Salary £5 5s. per week. Candidates must be unmarried and duly registered under the Medical Act. Apply, stating full particulars, to the Medical Superintendent.

Prescot Union.—Assistant Medical OFFICER of the INSTITUTION and INFIRMARY, Whiston.—The Guardians invite applications from duly qualified men for the appointment of Assistant Medical Officer of the Institution and Infirmary at Whiston, near Prescot, Liverpool (600 infirmary beds).

Salary £240 (non-resident), rising to £250 per annum after twelve months' satisfactory service. The appointment will be determinable by one month's notice on either side and subject to the approval of the Local Government Board and the provisions of the Poor-law Officers' Superannuation Acts.

Applications, stating age and full particulars as to experience and qualifications, accompanied by copies of not more than three recent testimonials, to be sent to me by Friday, 8th January, 1915.

A. F. MANN, Clerk to the Guardians.

Union Offices, Whiston, Prescot, 18th December, 1914.

Noble's Hospital, Douglas, Isle of Man (55 beds; opened 1912; complete X-Ray Department equipped under the supervisiou of Dr. Hall Edwards of Birmingham).—The Committee invite applications for the post of RESIDENT HOUSE SURGEON. Candidates must be single, have double qualifications, and be registered under the Medical Act. The duties, in addition to ward and dispensary work, will comprise some visiting of patients in their own homes.

Salary £150 per year, with board and laundry.

Testimonials as to professional ability, &c., to be sent to me on or before the 31st December, 1914. The candidate appointed will be required to commence his duties as soon as possible.

16, Athol-street, Douglas, Isle of Man. D. H. ROTHWELL, Secretary.

Parish of Liverpool. — Wanted, RESIDENT ASSISTANT MEDICAL OFFICERS (ladies and gentlemen) for the BROWNLOW HILL INSTITUTION (1000 beds), Liverpool. Salary (subject to superannuation deductions) £250 per annum, together with separate apartments and usual resident allowances. The officer appointed will be required to devote his or her whole time to the duties, and to recognise the authority of the Visiting Medical Officers and the Select Vestry.

The appointment (determinable on any date by one calendar month's notice on either side) will in the first instance be for one year or for such shorter term as may be agreed, and be open for renewal at the expiration of that time for such further period and subject to such conditions as are then decided upon.

Applications, in candidate's own handwriting, stating age and qualifications, and enclosing copy of testimonials, to be made forthwith.

GAIUS W. COSTER, Clerk to the Select Vestry.

Parish Offices, Liverpool, 18th December, 1914.

Institution and Infirmary of the City of LONDON UNION.—ASSISTANT MEDICAL OFFICER.—The Guardians of the Poor of the City of London Union are desirous of receiving applications from candidates to fill the office of Assistant Medical Officer at their Institution and Infirmary, situate at 42, Clifden-road, Lower Clapton, N.E.

No candidate will be appointed unless registered and showing qualification in accordance with the Orders of the Local Government Board in reference thereto. They must be single persons of either sex and produce testimonials as to character.

The salary is £200 per annum, together with furnished apartments, rations, and washing.

The officer will be appointed subject to the approval of the Local Government Board and the provisions of the Poor-law Officers' Superannuation Act, 1896.

Applications (on forms to be obtained at these offices), with testimonials, must be sent addressed to me (post paid) on or before the 11th day of January next.

EDWARD R. WOODWARD, Clerk to the Guardians.

61, Bartholomew-close, 12th December, 1914.

Birmingham Union.—Medical Staff (male).—The Guardians invite applications from duly qualified Medical Men for the following vacancies at their Institutions:—

DUDLEY ROAD INFIRMARY.

SECOND ASSISTANT MEDICAL OFFICER at a commencing salary at the rate of £210 per annum.

THIRD ASSISTANT MEDICAL OFFICER at a commencing salary at the rate of £170 per annum.

FOURTH ASSISTANT MEDICAL OFFICER at a commencing salary at the rate of £160 per annum.

SELLY OAK INFIRMARY.

ASSISTANT MEDICAL OFFICER at a commencing salary at the rate of £180 per annum.

Each of the above appointments are residential ones, including apartments, rations, laundry, and attendance.

The salary and the assessed value of the emoluments are in each case subject to a deduction of £2 per cent. under the Poor-law Officers' Superannuation Act, 1896.

The gentlemen appointed to the posts will be required, should occasion arise, to assist at any of the other institutions under the control of the Board.

Applications, stating which post is applied for, and age and experience, together with copies of recent testimonials, should be sent to the Chief Medical Officer, F. W. Ellis, F.R.C.S., M.D., Dudley-road Infirmary, Birmingham. R. J. CURTIS, Clerk to the Guardians.

Union Offices, Birmingham, 15th December, 1914.

West Riding Asylum, Wakefield.—ASSISTANT MEDICAL OFFICER (male or female) wanted, with post-graduate experience. Salary £250, rising by annual instalments of £25 to £300, and on promotion to £350, and eventually to £450, with apartments, board, washing, and attendance. Under Asylums Officers' Superannuation Act, 1909. Apply, Medical Director, at once.

Resident House Surgeon.—Royal NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Required at once. 55 beds for Orthopædic cases, 130 beds occupied by wounded soldiers. £100 per annum, board, washing, &c. Apply to the Secretary.

City of London Hospital for Diseases of the CHEST, Victoria-park, E. (rail and tram, Cambridge Heath, G.E.R.).—Applications, with copies of recent testimonials, for the post of HOUSE PHYSICIAN (male) are invited to be sent to the Secretary on or before the first post Monday, 28th December. The appointment will be for six months. Candidates must be doubly qualified. Salary at the rate of £75 per annum, with board, residence, and washing provided.

George Watts, Secretary.

City of London Hospital for Diseases of the CHEST, Victoria-park, E.—The Committee of Management are desirous of appointing a PHYSICIAN to the Out-patients to supply a vacancy which has occurred. Candidates must be Fellows or Members of the Royal College of Physicians of London. An honorarium is attached to the post. Applications, accompanied by copies of testimonials, should reach the Secretary at the Hospital not later than first post Monday, 4th January.

George Watts, Secretary.

Newcastle-on-Tyne and NorthumberLAND SANATORIUM for CONSUMPTIVES, Barrasford, North Tyne (50 beds).—RESIDENT MEDICAL OFFICER (male) required immediately. Salary £350 per annum, advancing £25 a year to £400, with board, residence, and laundry. Apply for forms of application and particulars of duties to the Secretary of the Institution, at 26, Northumberland-street, Newcastle-on-Tyne, to whom applications, with three testimonials, should be sent as soon as possible.

Neil Brodie, Secretary.

Worcester General Infirmary.—The office of RESIDENT MEDICAL OFFICER will shortly be vacant. Ladies and gentlemen wishing to offer themselves as candidates must send copies of recent testimonials (not more than four), addressed to the Secretary at once. Candidates must possess a Medical and Surgical qualification, and be registered under the Medical Act. Salary £150 per annum, with board, residence, and washing.

A personal canvass of the Committee is prohibited.

By order of the Executive Committee.

E. J. Holland, Secretary.

Worcester General Infirmary, 22nd December, 1914.

Lowestoft and North Suffolk HosPITAL.—Applications are invited from ladies and gentlemen for the appointment of HOUSE SURGEON.

Candidates must be unmarried, under thirty years of age, fully qualified, and on the Medical Register. Salary at the rate of £150 per annum, with board, residence, and laundry.

The appointment will be determinable on either side at three calendar months' notice.

Applications, with copies of not more than three testimonials, to be received by me on or before the 5th day of January, 1915.

W. Bryan Forward, Clerk.

148, London Road North, Lowestoft, Dec. 15th, 1914.

The Gloucestershire Royal Infirmary and EYE INSTITUTION (140 beds.)—ASSISTANT HOUSE SURGEONCY. Candidates must be registered and possess a Medical and Surgical qualification.

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Remuneration at the rate of £80 per annum, with board, residence, and washing.

Applications, stating age, and accompanied by testimonials, to be forwarded to the Secretary on or before Wednesday, the 30th December.

The elected candidate will be required to enter upon his duties at once.

This appointment is open to gentlemen only.

Gloucester, 15th December, 1914. Henry P. Pike, Secretary.

Wolverhampton Union.—Assistant (RESIDENT) MEDICAL OFFICER.—The Guardians of the Poor of the Wolverhampton Union invite applications for appointment as Assistant Medical Officer of the Workhouse and Medical Officer of the Cottage Homes at a combined salary of £250 per annum, together with furnished apartments, rations, &c.

The gentleman selected will also be appointed Public Vaccinator for the Cottage Homes, with fees prescribed under the Vaccination Acts.

Candidates must be single, or widowers without children, and must be duly qualified and registered. The appointments will be subject to the approval of the Local Government Board and to the provisions of the Poor-law Officers' Superannuation Act, 1896.

Applications, upon forms to be obtained from my office, must be delivered to me not later than first post on Monday, 11th January, 1915.

Canvassing the Guardians, directly or indirectly, will be deemed a disqualification. Frank Harrison, Clerk to the Guardians.

Poor-law Offices, Wolverhampton.

Wanted, by Lerwick Parish Council and SHETLAND COMBINATION POORHOUSE COMMITTEE, a qualified MEDICAL OFFICER. Salary for combined offices £78 per annum. A splendid opening exists for a private practice, from which a good income may be anticipated, more especially if the late medical officer's practice is acquired. Applications to be lodged with the subscriber up to the 2nd February next.

James Innes.

Parish Council Office, Lerwick, 15th December, 1914.

Miller General Hospital for South-EAST LONDON, Greenwich-road, S.E.—SENIOR HOUSE SURGEON required.

The appointment is for six months, at a salary of £100 per annum, board, residence, and laundry being provided.

Applications, stating age, qualifications, and experience, with copies of three recent testimonials, to be sent to the undersigned.

Applications from women candidates will be considered.

22nd December, 1914. Ernest Marks, Assistant Secretary.

Edmonton Education Committee.—The Education Committee of the URBAN DISTRICT COUNCIL OF EDMONTON, Middlesex, invite applications from duly qualified medical practitioners (male and female) for the post of TEMPORARY ASSISTANT SCHOOL MEDICAL OFFICER under the Education (Administrative Provisions) Act, 1907, and of CERTIFYING OFFICER under the Mental Deficiency Act, 1913, pending the return of the permanent officer from naval service.

The person appointed will be required to carry out under the direction of the Committee all the necessary work of inspection, &c., and to devote the whole of his (or her) time to the office.

Salary at the rate of £300 per annum.

Applications, stating age, qualifications, and experience, with copies of not more than three recent testimonials, must reach me not later than 9th January, 1915.

Canvassing for the position will disqualify absolutely.

Arthur Heap, Secretary.

Education Offices, Brettenham-road, Upper Edmonton.

County Borough of Sunderland.—Temporary TUBERCULOSIS MEDICAL OFFICER.—Applications are invited for the appointment of a Temporary Tuberculosis Medical Officer (male or female), at a salary at the rate of £500 per annum.

The gentleman appointed must be a registered medical practitioner, and must devote the whole of his time to the duties of the office.

The appointment will be for one year or for the time of the war as the case may be.

Preference will be given to those who have had special practical experience in the treatment of tuberculosis at a Sanatorium or otherwise. Experience in the use of Tuberculin and of other special treatment is important.

The officer appointed will have charge of the Tuberculosis Dispensary and the general arrangements for the provision of tuberculosis treatment thereat.

He must be prepared to act as expert adviser of the Borough Insurance Committee in regard to the diagnosis and treatment of cases of tuberculosis.

Canvassing, directly or indirectly, until after the first selection of candidates by the Committee will disqualify.

Applications, stating age, qualifications, and previous experience, accompanied by copies of not more than three recent testimonials (which will not be returned), to be forwarded to the undersigned not later than Tuesday, the 5th January, 1915, endorsed "Tuberculosis Officer." H. Craven, Town Clerk.

Town Hall, Sunderland, 18th December, 1914.

Missionary Hospital Work in India.—Qualified MEDICAL MAN required who is in sympathy with religious work. Passages paid and small monthly allowance made. Apply, sending copies of testimonials.—Address, General Booth, Foreign Office Salvation Army Headquarters, 101, Queen Victoria-street, London, E.C.

The Booth Steamship Company, Limited, require the services of a SURGEON in a Cargo Steamer to Galveston and back, sailing about 30th inst. Voyage 2½ months. Wages £15 per month.—Apply at once, Medical Superintendent, The Booth Steamship Co., Limited, Tower Building, Liverpool.

Ship's Surgeon.—Messrs. Elder Dempster and Co., Limited, have a few vacancies for Surgeons in their West African Service. Steamers call Madeira, Canary Islands, and West African ports. Pay £15 per month. Fees allowed for attendance on passengers. Length of voyage varies from six to ten weeks, according to particular route.—Apply, Medical Superintendent, Messrs. Elder Dempster and Co., Limited, Colonial House, Liverpool.

Wanted, Assistant Medical Officer for Medical Establishment on a Gold Field situated in the Mysore State, Southern India. Healthy climate. Must have knowledge of Tropical Medicine. Salary £450 per annum. Engagement for three years. Bungalow, servants, and light provided. Testimonials and references required.—Address, M. L., care of Davies & Co., Advt. Agents, Finch-lane, E.C.

Locum Tenens.—No fee to Principals. —Mr. PERCIVAL TURNER has a large staff of trustworthy Gentlemen acting as Locum Tenentes, and will be happy to send them as required at short notice on application.—Address, 4, Adam-street, Adelphi, London, W.C. Telegrams "Epsomian, London." Telephone: 3399 Central.

Locums and Assistants will find work on applying to Lee & Martin, 93, Hall-road, Handsworth, Birmingham. Telegrams: "Locum, Birmingham."

Locum Tenens wanted shortly in a Public Asylum. Lunacy experience not essential. Salary £6 6s. a week and all found.—Apply to Mr. Percival Turner, 4, Adam-street, Strand, London, W.C.

Locum Tenens supplied by the Scholastic, Clerical, and Medical Association, Limited, 22, Craven-street, Trafalgar-square, W.C. No Locum Tenens is recommended unless personally known or until direct inquiries have been made as to his character and competence.—Telegraphic Address: "Triform." London. Telephone: No. 1854 Gerrard.

Locum Tenens urgently required.— Messrs. ARNOLD & SONS require several reliable gentlemen to complete their Staff.—Apply, personally if possible, Transfer Dept., 6, Giltspur-street, London, E.C. (opposite St. Bartholomew's Hospital). Telephone: 5240 City. Telegrams: "Instruments, London."

Locum Tenens wanted immediately.— Mr. Percival Turner is in immediate want of several reliable Gentlemen with satisfactory credentials to fill vacancies caused by the War and otherwise.—Apply, personally if possible, to Percival Turner, 4, Adam-street, Strand, London, W.C. Telephone 3399 Central.

Lady Dispenser seeks position. Ex-perienced in institution and private work, medical book-keeping; some hospital nursing. Excellent testimonials.—Miss B. Ruddock, 258, Kew-road, Kew Gardens.

Wanted.—An Assistant or Dispenser required during the war. Either sex. Country Practice. Work not heavy.—Address, No. 265, THE LANCET Office, 423, Strand, W.C.

To Purchasers.—Do not buy any Practice or Partnership without an investigation into books and other inquiries by an expert specially competent to conduct the same. Thirty-six years' personal attention to such inquiries has given Mr. PERCIVAL TURNER an unique ability to advise in all cases. Terms and full particulars free on application to 4, Adam-street, Strand. London, W.C. Telephone: 3399 Central. Telegrams: Epsomian, London.

Lee & Martin, of 93, Hall-road, Handsworth, Birmingham, have several PRACTICES in various parts of the Country for Sale at reasonable prices.

For Disposal.—A really good Practice is not always to be had directly, but Mr. Percival Turner (with thirty-five years' personal experience) can generally offer applicants something suitable on being furnished with details of their requirements. Nearly all the best Practices are Sold by him without being advertised.—Full information free of charge on application, personally or by letter, to 4, Adam-street, Adelphi, Strand, W.C.

Practices and Partnerships.—When purchasing either the importance of a careful investigation of the Vendor's books should be borne in mind. Messrs. LEE & MARTIN, of 93, Hall-road, Handsworth, Birmingham, have a Department specially for this work, and only Chartered Accountants are employed. Charges moderate and efficiency guaranteed.

£1300 a year.— London. — Mostly panel and ready money. No night work. Very transferable. Expenses small. Good house; rent £50. Introduction as desired. Premium under one year's purchase.—Apply (No. 5604), care of Mr. Percival Turner, 4, Adam-street, Strand, London, W.C.

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½ ounce white phial	4s. 0d.	,, ,,
1 ,, ,, ,, plain or teaspoons	4s. 6d.	,, ,,
1½ ,, ,, ,, ,, ,, ,,	5s. 0d.	,, ,,
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The above can be had Washed and Corked, ready for use, 1s per gross extra.

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CORKS. Superior Quality:—

6 and [illegible] oz., in 6 gross bags	10d.	per gross.
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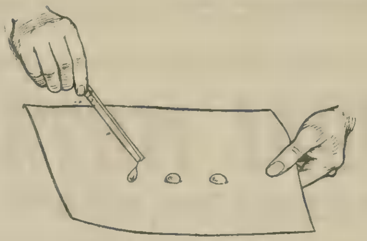


Fig. 1.

A few drops of urine are transferred to a quarter-sheet of note paper by means of a folded strip of paper.

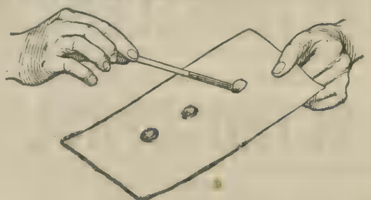
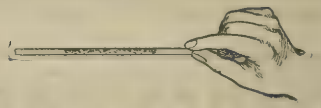


Fig. 2.

The end of the Endolytic Tube is allowed to touch one of the drops of urine, when the latter will be absorbed into the reagent by capillary attraction.



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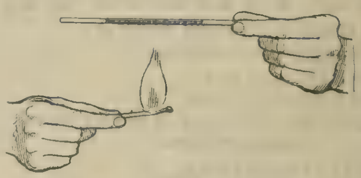

Fig. 4.

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